The VOLTA REVIEW

A MONTHLY DEVOTED to the PROBLEMS of DEAFNESS.

Volume XIII FEBRUARY, 1912 Number 9

VISUAL TEACHING OF THE DEAF

(SEE PAGE 319)

The VOLTA BUREAU
WASHINGTON D·C·

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THE American Association to Promote the Teaching of Speech to the Deaf, a scientific and scholarly body, was incorporated under the laws of the State of New York in 1890 "for the purpose of promoting instruction in speech to all deaf children throughout America."

In December, 1908, the Association took over and is now continuing the work of **The Volta Bureau for the Increase and Diffusion of Knowledge Relating to the Deaf.**

The two institutions labor to keep alive in the deaf the most precious acquisition of the human race, the faculty of speech, to the end that no child in America shall grow up dumb because of deafness; to obtain equal opportunities, educational or otherwise, for the deaf; correctly to inform the public regarding this great class of our population, who number some 89,000 according to the last census; and to conduct research work into the general subject of deafness and the problems arising therefrom.

The **membership** of the Association includes representatives of every system of teaching speech to the deaf that is now extant, as well as aurists, psychologists, scholars, scientists, philanthropists, the deaf themselves, and all investigators into or thinkers upon the general subject of deafness and its phenomena.

The Association accomplishes its work, namely, the promotion of the teaching of speech to the deaf and the diffusion of cognate knowledge:

1. By **publications,** including monographs and ***The Volta Review,*** an illustrated monthly magazine of general and technical interest, all the receipts from which are devoted to the purposes of the magazine itself or to furthering the work of the Association.

2. By the maintenance of **the largest technical library** of its character in the world. The library is located at the Association's home, in the Volta Building, Washington, D. C., and is open to the free use of all members.

3. By **conventions,** at which all the leading specialists in problems relating to the deaf meet for an interchange of views and for the delivery of addresses, which are later published.

4. By the preparation of **exhibits** for the purpose of enlightening the public as to the character, the importance, and the progress of the work done by the Association.

5. By contributing toward the maintenance of **a normal class** of instruction at the Clarke School, Northampton, Mass., a sum which last year was in excess of the total revenue derived from membership dues in the Association.

6. By providing **a clearing house** of information through its executive offices in the Volta Building, at Volta Place and Thirty-fifth street, Washington, D. C.

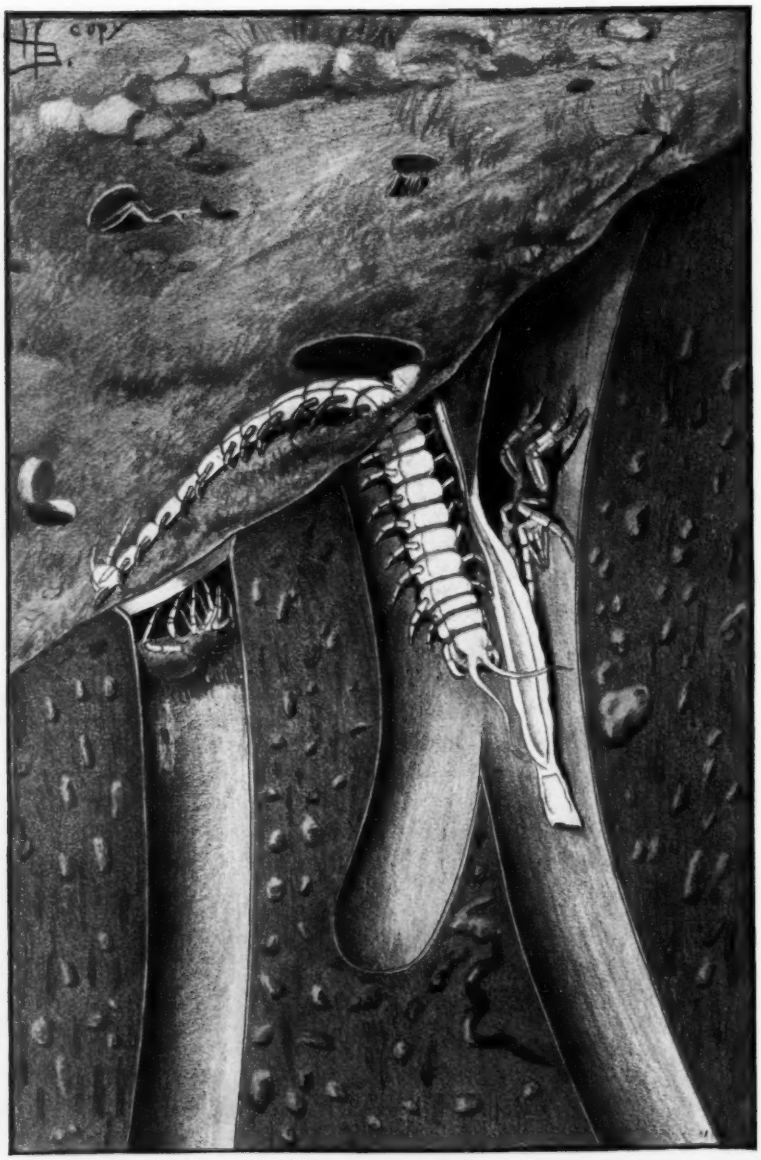
7. By maintaining **a Teacher's Information Agency,** which is free to members. Last year the Information Agency received about 70 applications from teachers, and the number of inquiries for teachers was in excess of this supply.

8. By the preparation and circulation of **exhaustive statistics and information** relating to the deaf.

9. By such additional **research work** as the Association's resources will permit.

The **annual dues are $2** and the fee for a life membership is $50. There is **no entrance fee.**

All members of the Association are entitled to its magazine, ***The Volta Review,*** free of charge for the period of membership; to a reduced rate on its publications; to the free use of its library, and to all information collateral to the purposes of the Association which may be in the possession of its officers.



Drawn by Harry Bradford

A LABYRINTH WITH AN X

(See "Nature's Master Builders")

THE VOLTA REVIEW

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A Monthly Specializing on Deafness and the Deaf

Volume 13 FEBRUARY, 1912 Number 9

NATURE'S MASTER BUILDERS

BY F. K. NOYES

NATURE has so provided for her creatures that those which are not strong enough to fight their enemies are usually swift enough to run away from them. Among the exceptions to this rule, however, are the spiders, which are neither very strong nor very speedy. So, in order that the spider may not be entirely helpless, Nature has given it a wonderful power—the ability to spin an unlimited quantity of silken threads out of its own body. With the aid of these threads various kinds of spiders are able to make cobwebs in which to trap the game which they could not catch by running; they are able to build hiding-places where their enemies cannot find them, and they are even able to make little airships, in which they can sail for miles, wherever the wind blows them.[1] In doing these things the spiders have shown ability as engineers, architects, inventors, weavers, carpenters, and miners that can scarcely be matched by any other creature except man.

On the opposite page there appears a picture showing how one kind of spider protects itself from its enemies. This is the variety of trap-door spider, which scientists call *Nemesia manderstjernæ*. It lives in the Riviera, a district near Genoa, Italy. This trap-door spider makes its nest by digging two passages, which cross each other like an X, in the ground. In the upper left-hand corner of the X is the entrance to the nest. Over this entrance the spider builds a neat little door, made of earth and silk, which it covers with moss or grass, so as to make it look like the ground about it. At the center of the X, where the two passages of earth cross each other, the spider builds another trap-door, which swings on its hinge like a curtain.

In the picture we see a centipede coming into the spider's home to seize it and eat it. The centipede has pushed past the first trap-door and is looking for the spider further down in the nest. At first the spider slipped behind the second trap-door, which it shut where the two passageways in its nest crossed each other. It had hoped that the centipede would not notice this door, but would turn down the lower left-hand chamber, where of course it would find nothing. But the centipede was too clever to be deceived in this way. It found the second trap-door, and then there was a pushing match, in which the spider was beaten.

So, as the centipede forced open the second door, the spider has slipped into the upper right-hand chamber of its home, closing its trap-door after it, and is leaving its enemy to explore the lower right-hand passage, where of course it will again find nothing. Very probably the centipede will now go away, believing that the nest is empty after all; but if it finds the third hiding-place it will have hard work, indeed, to push past the door again, for this time the door swings in such a way that the harder the centipede pushes the tighter the door shuts, as you can see by the picture. Let us suppose, however, that the centipede is able to force its way into the spider's

[1] See also "Ballooning Spiders," by Enfield Jainer, page — of this issue.

last hiding-place. Even then the spider still has a way of escape, for this chamber is roofed over only with a very thin coating of silk and earth, which could easily be torn away in case of need. Thus, after all his work and searching, the centipede would only find what he had found twice—an empty chamber.

The planning and construction of this nest show as great ingenuity as is displayed by any creature lower than man. More wonderful still, it has been found that baby spiders of this species, while still as small as little flies, make tiny nests for themselves, which are exact copies of their old homes, including the two trap-doors, the branching passages, and the two secret chambers. The lids of some of the nests made by the baby spiders are shown in the picture. Some of them are less than a tenth of an inch across.

On the left of the nest which is being entered by the centipede there is a single tube. This is the home of another kind of trap-door spider, which has not learned how to make the X-shaped nest that is built by its neighbor. This second spider's nest is simply a long hole in the ground with a trap-door at the top. If the centipede had attacked its home this spider could have done nothing but try to keep its trap-door closed, and when once the centipede got inside it would have had no further trouble in eating the spider. In the picture the second spider has taken alarm and is holding down the trap-door entrance to its home to prevent it from being opened.

A fully grown trap-door spider is about an inch long, and its nest is about nine inches deep and an inch wide. The walls of the nest are lined with several layers of silk, which the spider spins out of its own body. This silk lining prevents the walls from falling in and also furnishes a strong attachment for the trap-door. Very often a row of neat little holes is made on the under side of the trap-door, and another row occurs in the silk lining of the nest, at the upper end of the tube. These are the holes into which the spider puts its claws and fangs when holding the door against an enemy, and the arrangement allows it to obtain a very firm grip.

Trap-door spiders have very many enemies; so they spend most of their days shut up tight in their nests and hunt their food at night. Sometimes they do not leave home at all, even when it is dark, but lie in wait at the mouth of their nest, with the door just raised, ready to pounce upon any weaker creature that comes near. Sometimes, again, they spread a long, low snare, made out of their silk threads, close to the ground, and when an insect becomes caught in this, it is dragged into the spider's nest and eaten. All fragments left from the meal are carefully removed to a distance of several feet from the nest.

BALLOONING SPIDERS

BY ENFIELD JOINER

BEFORE men ever thought of inventing airships or balloons, a certain small creature had learned to make for itself a balloon, or airship, in which it could travel rapidly and safely through the air. The little creature is the flying aranead, or "ballooning spider."

It is believed that the young of nearly all spiders fly about more or less in the air on the silken threads they spin, but the "ballooning spider" alone knows how to make an airship which will carry her for miles and miles above the earth's surface, even far out to sea.

There was once a lover of animals, birds, insects, and all other creatures, named Charles Darwin. He traveled for many months on a ship called the "Beagle," and he tells us that once when he was sixty miles out from land he saw

a great number of flying or ballooning spiders near the ship. He said that for a minute or two they rested on the ship's ropes, but that the lightest breath of air started them again on their voyage. One ship's captain tells how a company of spiders were caught in his rigging while he was two hundred miles out at sea. They finally disappeared as they came, "with a sort of umbrella canopy over each one," which was nothing more or less than the balloon manufactured by the traveler. The wind was blowing from the continent of South America, and had blown them out to sea.

For the ballooning spider floats with the wind. She can come down to earth if she wants to by drawing in the streamers which keep her balloon afloat, but she cannot choose the direction in which she travels. She must go as the wind blows her.

Would you like to know how she makes these wonderful balloons? In her little body there are many glands full of a thin juice. Under her body are her "spinnerets," and they are covered with tiny, tiny spinning spools, through which the spider sends the juice from her glands. Just as molasses candy hardens in cold air, so this juice hardens into a silken thread. The wind catches each thread and stretches it out six, ten, even twenty feet. While the spider is spinning these threads which stream out from her body in the direction in which the wind is blowing, she stands on a fence-post, or a tall flower, or a corn-stalk. When the streamers are ready she lifts her eight claws and lets the wind bear her away. As she starts up in the air she turns over, so that her body has its back down toward the earth. She catches the threads from the spinnerets under her body in her eight claws and with her feet makes a strong, tiny net, like a basket, out of part of the thread. As she does this the spinnerets are at work again and the long streamers float out from the back as well as the front part of her body. She is now ready for the voyage. She hangs in her basket between the two groups of streamers and the wind carries her gently away. Perhaps it will take her high up into the air, so that in a little while she is lost in the sunshine. Perhaps it will carry her to a clump of goldenrod, for October is the favorite month for ballooning, and she will make her new home there. Perhaps it will drive her airship against some tall church steeple, and perhaps, as I told you a while ago, it will carry her far out to sea.

The spider cannot make a balloon the first time she attempts it. Sometimes she tries many, many times before the streamers she spins can carry her away. On frosty mornings have you not often noticed what you thought were broken bits of spiders' webs hanging from posts or shocks of corn or blackberry vines? They were the cast-off threads of a ballooning spider, not just right for the making of a balloon.

The spider is a very patient creature, though, and doubtless after many failures succeeded, and while you stood admiring the dewy, silky threads floating out in the breeze, the little creature who made them was perhaps traveling gaily across the meadow.

THE STORY OF ARACHNE, THE FIRST SPIDER

BY ENFIELD JOINER

ALONG time ago, in the country of Greece, mothers used to tell their children a story of how the spider came into the world.

In those days people worshiped many gods, and often the gods were jealous of men and women. At least, the Greeks thought that they were. They believed that the gods did not like to have any man or woman very strong, or very brave, or very wise; they thought that the gods punished people for knowing too much.

We know now that there were never

any gods or goddesses such as the Greeks and Romans believed in; but some of the prettiest stories in the world are about these same gods and goddesses.

One of the goddesses, who was most jealous of mortals, as the Greeks called themselves, was named Athene. Her father was the king of all the gods and she was the wisest among them. She could also weave the most beautiful cloth in the world. She taught the women of Greece how to weave and spin and how to make beautiful things with their hands.

At that time in Greece there lived a maiden named Arachne. She used to sit out of doors spinning and weaving and embroidering, and she worked so gracefully that the nymphs themselves, the fair maidens who lived by the streams and in the groves, used to come and watch her as she worked.

One day they asked her if Athene had taught her.

Now Arachne was a very proud girl. She wanted the nymphs to think that she had learned to work by herself. So she replied that Athene had never helped her, which was true; but she went on to say that if Athene herself would come down to earth and try her skill with her, she believed that she, Arachne, could beat even the goddess in the arts of spinning and weaving.

Athene heard what Arachne said and was very angry. She appeared one day to her in the form of an old woman, and told her to ask the goddess to forgive her for her pride. But Arachne laughed and rashly said that she was not afraid of the goddess; that if Athene would only come down and weave a piece of cloth, she, Arachne, could make a more beautiful one.

The goddess then threw off her disguise and appeared to Arachne as the terrible grey-eyed daughter of Zeus. Poor Arachne! She grew pale and trembled.

Athene called some of the nymphs and told them to bring the looms for the contest. Passing the slender shuttle back and forth, she made a beautiful picture in her cloth. When Athene had finished, a loom was brought for Arachne. She, too, wove pictures in her piece—pictures showing that the gods and goddesses were weak and cruel and unjust.

The pictures made Athene very angry and she struck Arachne's canvas with her shuttle and tore it to pieces. It had been beautifully woven, but it was not so well done as Athene's.

When the goddess tore her canvas, Arachne was so frightened that she ran to a tree and hanged herself.

Athene was sorry for her then. She did not want her to die, so she sprinkled the juices of aconite on her, and lo! Arachne was changed into a spider. She and her children were to go on spinning and weaving forever.

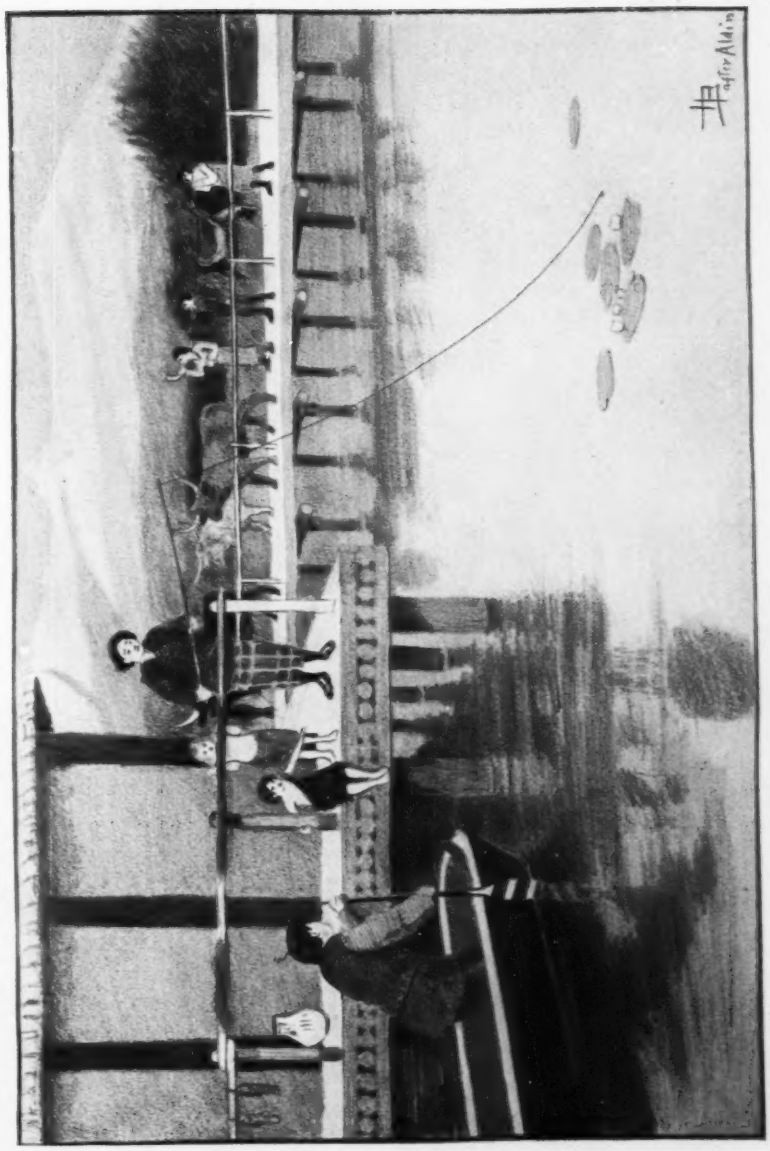
Of course this is not a true story, but the little Greek children thought that it was. I think that whenever they saw a patient spider spinning a web for itself they thought, "Poor Arachne! How foolish to contend with a goddess!"

THE LAKE-DWELLERS

BY ENFIELD JOINER

FIVE hundred years before Christ was born there lived in Europe some people who built their houses on the lakes and marshes. They drove piles down into the water and made a large platform of logs; then they built their huts on the platform.

A Greek historian named Herodotus tells us about these lake villages. He says that the piles were driven down and the platform built by all the men of the village; then each man built his hut for his family. Whenever a man married, he had to drive in three more piles and



Drawn by Harry Braiford

—"WHEN AT SUNSET THE MEN DROVE THEIR CATTLE OVER THE BRIDGE"

make the platform larger. One long bridge led from the land out to the platform. This was a kind of draw-bridge, which could be in part pulled up when the inhabitants of the village had all crossed over.

Unlike the reindeer hunters, who lived in Europe many years before them, the Lake-Dwellers had gardens on the land and raised both wheat and barley, as well as flax, fruits, berries, and nuts. They had apples and pears and hazelnuts we know, for all of them have been found in a buried village. Their houses had hearthstones in them; they had stone grain-crushers, in which they made flour with which to make bread, and they even made cakes of the seeds of poppies.

They had spinning-wheels, and they spun their flax and wove the thread into cloth; they also made woolen cloth. They also made chains and bracelets of bronze, iron, and amber. One ornament of gold has been found in one of their villages. They liked pretty things for their houses, for they had learned how to make pottery jars, jugs, and pitchers, which they painted. They made a great many useful things out of wood, too—dishes, spoons, combs, fish-hooks, and yokes for their cattle.

Living on the water, the Lake-Dwellers naturally fished a great deal. Herodotus says in his book that they used to let down baskets into the water and draw them up full of fish. They hunted sometimes. Venison, reindeer flesh, they were very fond of, but they did not eat the horse or the goat.

The Lake-Dwellers had no schools and no books. Whether they had any religion we do not know. They were a brave people, though. Herodotus tells us that the Persians, who were then the greatest people on the earth, could never conquer them.

For a long time people thought very little about what Herodotus said about these strange people who lived on the water. Some wise men used to think that Herodotus liked to make up stories to put into his books, and some people do not believe half that he wrote. But some years ago, one winter in Switzerland, when the waters of a lake had gone down and the land which had been under water was left uncovered, some laborers began digging there, thinking that they would plant grain on the fertile ground. They found the piles which had held up the platform of a lake village. A great German scholar went to Switzerland and found the remains of several villages in different lakes.

On the land near the lakes some burying grounds were found. At one place a huge stone box, almost as large as a small room sunk in the ground, was uncovered. It held fifteen or twenty skeletons, sitting upright around the sides. It is believed that lake villages were often destroyed by fire, and all these people may have perished at the same time. Bracelets and beads were buried with the dead. In other places single skeletons lying with their feet toward the east have been found. With one body a boar's tooth was included among the discoveries made.

After all these discoveries were made, people remembered what Herodotus and other ancient historians had written about people building their homes on the water. But Herodotus and the other historians fail to tell us why they chose the lakes instead of the land. Perhaps they felt that they were safer on the water from the wild beasts that roamed over Europe then. Perhaps they lived there because long, long before one family had tried it and liked it, and generation after generation had kept on living as their fathers had done.

I am afraid that the children of the lake village did not have a very good time. Herodotus tells us that the mothers used to tie cords about their small children to keep them from falling into the water. It must have been very tiresome to have to sit all day tied to a post, looking down into the blue water. It must have been exciting when at sunset the men drove all their cattle over the bridge into the village for the night. I think, though, on the whole, I had rather live on the land, hadn't you?

VALENTINE CUSTOMS

BY ENFIELD JOINER

LONG before St. Valentine lived and died, the fourteenth of February was celebrated in Rome in somewhat the same way in which we celebrate it now. The Romans had a god named Lupercus, and on the fifteenth of every February they had a feast in his honor. Goats and dogs were sacrificed on his altars. After the sacrifice the skins of the animals were cut into long strips and the priests, who were not regular priests but rich and noble young men chosen for the occasion, ran through the streets hitting all the girls and women they met with the strips. The girls thought that it meant good luck to them to be struck by a priest, and ran down the streets laughing and asking the priests to strike them.

After a while another custom was started in Rome during the feast of Lupercus, the Lupercalia, as the holidays were called. On the evening of the fourteenth the names of a great many girls were put into a box and young men came to the box and drew out the different names. In that way they found partners for the gay feast.

St. Valentine was a good bishop who lived in Rome in the third century. Claudius was Emperor of Rome then, and because he hated the Christians he had the good bishop Valentine beheaded. It happened that the day set apart by the early Christian fathers to celebrate in honor of Bishop Valentine was the fourteenth of February.

Now the Christian boys and girls also liked to draw their partners for the festival, and so, since the fourteenth was St. Valentine's Day, each boy came to call the girl whose name he drew from the box his valentine.

Even so late as the time of the "Merry Monarch," Charles the Second of England, who lived a little more than two hundred years ago, a "valentine" was not a present or letter, as it is now, but a partner chosen for the day's fun. People gave presents to their "valentines," usually of jewelry.

There is an old story that the birds select their mates and begin to build their nests on St. Valentine's Day. We keep the day nowadays by sending little notes and presents to those whom we love. "The old order" has changed a little, but the meaning of the sentiment of the day is the same.

FISH AND FISHERS OF OTHER LANDS

BY F. K. NOYES

WE HAVE been so used to thinking of fish as being caught with hook and line, with net, or with spear, that at first it would appear as if there were no other way to catch them. But in other countries these by no means furnish the only fishing tackle that can be used to tempt a "shore-dinner" on to the shore. It has been found possible to catch fish with trained birds, with trained fish, or with spider-webs, and after much practise they may even be caught with the bare hands. But perhaps the strangest way in all the world to catch fish is to dig them out of the ground with a shovel, as the negroes do in one part of Africa.

Every year the Gambia River, in Africa, overflows its banks and covers the country for a great distance round about with its water. In a little while the water goes down again and leaves the fields covered with mud, in which many thousands of "mud-eels" are wiggling about. As there is no way for the eels to get back to the river, they burrow into the earth, to stay in hiding till the next freshet. The ground soon becomes hard and earthy once more, with the eels

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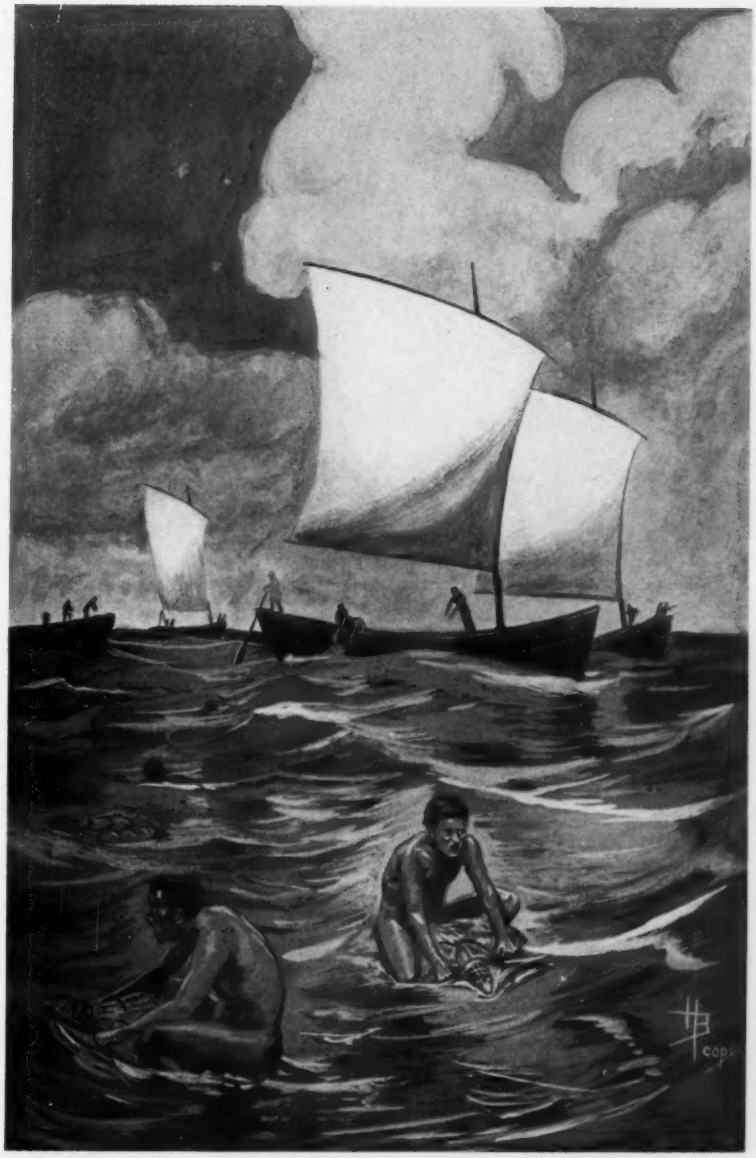
TRAP-FISHING FOR SALMON IN PUGET SOUND

snugly hidden underneath among the roots of the grass. For some time afterwards no native of that country has to trudge a mile or more to the river, with his fish-pole over his shoulder, whenever he wants a fish dinner. Instead, he simply spades up the meadow lot for mud-eels, which he finds in great numbers.

While the turtle is classed as a member of the snake family rather than as a fish, his home is in the sea, and so the sea-folk speak of "fishing" for him. In the Mediterranean the fishermen go after these creatures with the help of a turtle-catching remora. This little fish is also called the sucking-fish, because he has a natural sucker on the top of his head, by means of which he can fasten himself tightly to anything, and this is what makes him useful to the turtle fishermen.



Drawn by Harry Bradford

TURTLE-JOCKEYING IN THE EAST INDIES

The men row after the turtle, and if they cannot come up with him they will throw a remora after him. If everything goes well the remora lights somewhere on the turtle and clings to his back with his sucker. The men then pull in their remora, with the turtle attached, by a cord which they had fastened to the fish through a ring placed round its tail.

In the Indian Ocean and the Dutch East Indies the tortoise fishermen have still another way of catching their game. Here the fishermen have no remora to help them, and they dare not shoot the

tortoise for fear of injuring its shell, which is of great value. One way by which the tortoise is caught alive is to send a man into the sea after it. On reaching one of the tortoises, the swimmer gets on to its back, holding on tightly to the shell. The frightened tortoise plunges ahead or dives, but it cannot shake the man off. Gradually it finds itself, tired out with its efforts to escape, being steered up close to the fishermen's boat, where a rope is put round its neck and it is towed alongside. All the time the swimmer is in the sea he is in great danger from sharks.

Like the turtle and tortoise, the manatee is not a fish, but can be spoken of in the same breath. The manatee, or sea-cow, is a land animal, about six to eight feet long, which has taken to the sea—just as the whale, the walrus, the sea-lion, and the seal have done—and has lived in it so long that it is no longer at home upon land. Manatees are among the kindest, gentlest creatures living, and will risk their lives to help each other out of trouble. It is this very kindness which makes them an easy prey to the fishermen along the rivers of Central America and South America, for the fisherman has to harpoon only one of them in order to bring the whole herd to the surface. "As soon as the blood of one of them begins to flow, the others take it as a signal that one of their kinsfolk is in trouble and flock round him, affording one of the most pathetic sights in nature, all the herd moaning and crying, some trying to drag out the harpoon, others seizing the line in their teeth and trying to bite it through. On such an occasion the whole herd is at the mercy of the hunters, for the unwounded animals may be relied upon not to leave their brothers to their fate."

As the fishermen of the Mediterranean use trained fish to catch turtles, so do the fishermen of China use trained birds. The fact that the Chinese have taught cormorants to catch fish for them is well known, but the way in which it is done may not be a matter of common knowledge. When the bird is quite young a ring or collar of grass is fastened around its neck, loosely enough to allow it to breathe, but so tightly that it can swallow only a very small "mouthful." Then, with a cord tied to the collar, the bird is coaxed or forced into the water. Its instinct leads it to dive and bring up as large a fish as it can lift, although its collar will not allow it to swallow its prey. As it becomes better trained, the cord is left off, and finally the collar, also. Fishing with cormorants is very successful when done at night, with a blazing torch, for the light attracts the fish right up to the boat, where they become an easy prey for the diving birds.

The Chinese are also very skillful at catching fish with their bare hands. The fisherman wades into a shallow stream or pool and slaps and splashes the water till the frightened fish hide in the mud. Then, using his feet as feelers, he stoops and calmly picks the fish off the bottom.

ODD FISHING TRICKS

In Tierra del Fuego the natives live almost entirely on sea-food. The women catch most of the fish, as often as not making fish-lines out of lengths of their own hair, braided and joined. Sometimes a fish-bone is used as a hook, but more often the fish are caught without any hook at all. The body of a good-sized shell-fish is simply tied on to the end of the line, and the fisherwoman, sitting in her canoe, waits till some fish is choked by the bulky bait, and then draws up.

The fishermen of Norway sometimes use a clever device in catching herring. These fish are seined for, and in order to make the biggest catch at one netting it is of course necessary to drive the fish together. This is often done by lowering a wooden dummy of the herring's greatest enemy, the whale, behind the herring, and thus driving them to flee for safety into one of many narrow bays on the Norwegian coast, where the nets can surround them all.

The savage fishermen of New Guinea have found a strange ally in a spider of that island. This spider weaves a heavy

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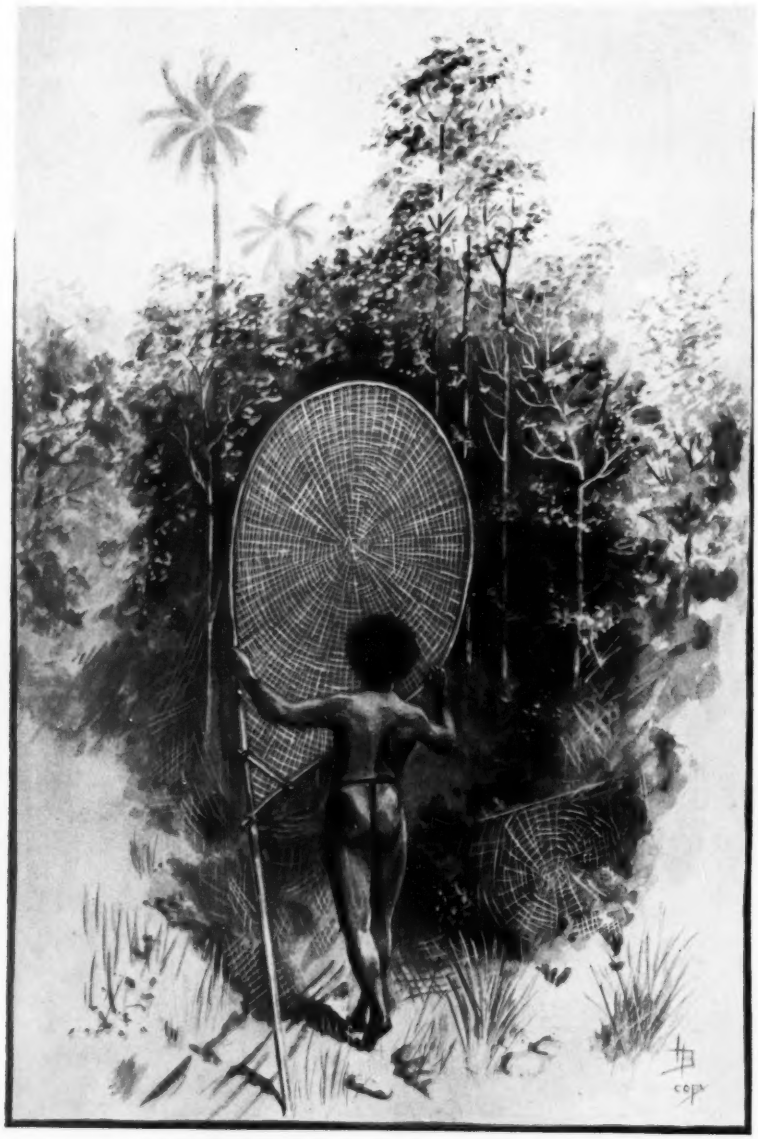
NATIVES FISHING WITH TRAINED CORMORANTS IN THE GRAND CANAL, SOO-CHOW, CHINA

web, about six feet across, the meshes of which can stand a good deal of strain. When the New Guinea man needs a fish-net, he bends a long bamboo into a loop and leaves it in the forest all day where these spiders are thickest. Upon coming for his bamboo, at the end of the day, the native finds that some spider has spun a cobweb within the loop. This makes a splendid net for the fisherman, who can use it to catch fish that weigh as much as a pound.



A COB-WEB FOR A FISH-NET

HOW NAVAJO RUGS ARE MADE

BY ENFIELD JOINER

HAVE you ever noticed, lying on a sitting-room floor or a den floor, a bright-colored rug of rather coarse weave, with strange figures on it—swastika crosses, arrows, maybe snakes? Perhaps from end to end zigzag lines in bright colors may have run; perhaps the center of the rug was a large diamond with small diamonds scattered about in it, and bright triangles forming the border. Whatever may have been the design of the rug, it was different from any other rug you ever saw. If it was a genuine Navajo, it was different from any other rug in the whole world. It was made by an Indian woman, whose home was in southeastern Utah, southwestern Colorado, northwestern New Mexico, or northeastern Arizona, and all the odd figures, which look so strange to you, were a kind of writing in which this Indian woman told some story of her life or of her tribe.

From the gathering of the wool from the sheep to the taking of the rug from the loom, all the work on the rug is done by the Navajo squaw. After she clips the sheep, she cards and spins, and, if necessary, dyes the wool. Three colors found in Navajo rugs are natural; that is, undyed. They are gray, white, and black. The white and black come, of course, from the black and white sheep, of which the Navajos have large numbers. The gray is sometimes the wool of a certain kind of dingy-white sheep; sometimes it is made by mixing black and white threads. The Navajos obtain indigo or blue dye from the Mexicans; they make orange dye from the leaves of a desert plant, and they get green by combining blue and orange. They now get red from Americans, though long ago they made a red dye by some secret process. Red, white, black, and gray are the favorite colors among rug-weavers.

Each color as well as each figure represents something in the story which each rug tells. Gray represents mother earth; black, the clouds and the rain, and white, the sunny regions above the clouds.

Each year a few rugs, called "prayer-rugs," are made by the Navajos. The designs of these rugs are very intricate and the meanings are very mystical. In beds of sand, which are placed in a tent, the great men of the tribe draw certain pictures. They call in the wisest women of the tribe and explain the pictures to them. The pictures are always prayers to the Indians' gods, and the women are sworn never to tell what the pictures mean. As they weave the pictures into rugs, they are praying to the gods for their tribe.

Last year a woman got very angry at one of the wise men, or medicine men, as they are called, of her lodge. She told her husband and her sons what the writing on her prayer-rug meant, thinking that she would thus get even with the medicine man. He and the other Navajos were so angry that they killed the woman's husband and sons. The old squaw escaped, but today she is a wanderer in New Mexico, afraid to go back to her home. The rug was sold for a high price by some of her relatives and is now in a museum in Utah. Another Navajo woman told the secrets of a prayer-rug to her husband, who was a white man. For punishment her eyes were put out.

Not only are the rugs all different, but no two ends of any rug are alike. One night, as he sat by a Navajo campfire, a white man who was a friend of the Indians asked one of the medicine men to tell him why the squaws never made two rugs by the same pattern. The old Indian was silent for a long time; then, looking at the fire, he said: "The Great Spirit, he make no two hands, no two faces, no two flowers, no two birds, no two trees, no two anything the same. If squaw make two rugs the same, she say, 'I am greater than the

Great Spirit.' For her pride she go blind."

It takes a squaw several months to weave the smaller, coarser rugs; the finer, larger ones, several years. The ordinary rugs sell from fifteen to a hundred dollars. Prayer-rugs, of course, are much more valuable, according to their size and weave.

On my floor lies a Navajo rug. I can read only part of the story it tells. The squaw who wove it lived in a valley with eight high mountains around it. Her husband's family was not friendly to her family, and she was not happy in his "tepee," or tent. As she wove her rug she left out all the luck signs, the swastiska crosses, and made pictures of the wigwams of the strangers. She used sober colors. It was plain that she longed to go back to her own people. Often at night, as I look at the rug in the fire-light, I wonder if the homesick Indian girl is at last happy and contented. I hope so, for I am very fond of her rug, with its soft grays and blacks and whites, and its tiny flecks now and then of gayer reds and blues.

SECRETS OF THE BIRDS

BY F. K. NOYES

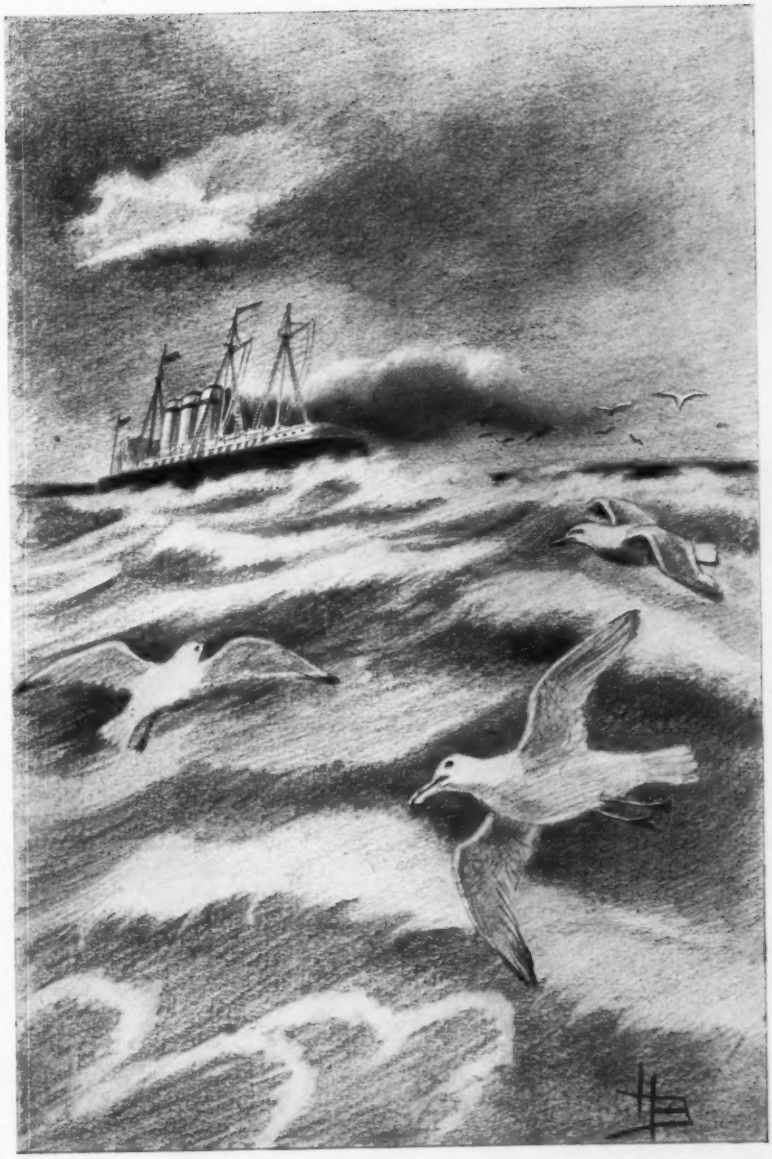
FOR thousands of years, ever since man has been able to think at all, he has been wondering at the birds and watching their habits. Yet only in recent times have we been able to understand many of the things they do; and, indeed, there are still a number of customs in bird life which we are not even now able to explain.

One of the commonest of these customs, and one which still offers puzzling questions to the students of birds, is that of migration. As every one knows, we have only a few birds with us in the winter; but in the spring a great many others come, build their nests, raise their families, and stay till the cold weather sets in, when they migrate, or move away, to a warmer land. Sometimes the winter home of the birds is as much as ten thousand miles from the country where they spend their summers; yet they can always find their way there, and in the spring they can make a safe return to the very tree or wall in our garden where they had their nest the summer before.

How do the birds find their way from one place to the other? You may say that the birds have made the trips before and remember the route. That may be true of the old birds, but what about the young ones that were hatched in this country? How are they to make the trip to their warm winter home over hundreds or thousands of miles of land and sea that they have never seen before?

Do the older birds go with them and show them the way? No; for in most cases the young birds who have never made the trip before are the first to leave, and very often they start several weeks before their parents. Well, then, do a few of the older birds go with the young ones to act as guides? We cannot say for sure about all kinds of birds; but we know that the English cuckoo, at least, does not help its little ones in this way. The English cuckoo lays its eggs in the nests of other birds, which hatch out the young cuckoos and bring them up. The parent cuckoo meantime enjoys itself all summer without giving one thought to its children, and when the time comes to migrate it flies away to Africa, where it spends the winter, long before the little cuckoos are able to make the trip. So the young cuckoos have no guidance from any one when it comes time for them to leave the land of their birth.

When a bird has made the journey from summer home to winter home several times, you might think that it could tell where it was going by the appearance of the country it flies over; but so far as we know this does not give them much help. Some birds fly so high in the air



HOW CAN THEY FLY AGAINST THE WIND?

that they cannot be seen at all; some fly across thousands of miles of heaving ocean, that looks the same wherever one turns; some birds migrate by night, when all the country is hidden from view by the darkness. So all we can say is that migrating birds must be able to tell where they are going by instinct. But how are they guided by instinct? What is the instinct? Is it a mysterious sense of direction that we do not have? No one can tell.

You may have seen water-birds—ducks, and perhaps gulls, or swans, or others—swimming about for hours at a time. Some birds sleep on the water, and the eider duck often spends days swimming about without once coming to land, even when the water is very frosty. Why don't the birds catch cold? That is one puzzle of bird life to which we can give an answer. The birds do not catch cold because the water does not chill or even wet them!

Suppose you were a sailor and had to go on deck in a freezing winter storm. First, you would put on a suit of heavy woolen clothes, to keep you warm, and over them you would draw on your rubber boots and rubber overcoat, to keep you dry. Then you would not care how hard it rained when you went on deck, nor how cold the weather was.

A water-bird—like a duck, for instance—is dressed just as a sailor is dressed who must venture into the storm. Just under its skin the duck has a warm layer of fat, and the skin itself is covered with down, which is the light, fleecy feathers that bed-quilts are made of. This fat and down are the bird's warm clothes. In order that they may always keep the duck warm and dry, Nature has covered them with a layer of smooth, heavy feathers, which shed the water like the sailor's rubber overcoat. These outside feathers overlap each other so tightly that the water cannot leak between them any more than the rain can leak between the shingles on the roof of your house; and the water cannot soak through the feathers, because the duck has made them waterproof. How does the duck do that? You can see for yourself by watching a duck at its toilet.

First, the bird carefully smooths down all its feathers till they fit closely and evenly. Then it presses its bill on a little place just over the root of its tail and afterwards rubs its bill over its feathers. It does this many times. What for? You can find out by turning aside a duck's feathers and looking for the little place on its back where it has been pressing its bill. There you will notice a little patch where the skin is raised into a low mound, and if you look very carefully you will see two tiny openings. The duck presses these openings to obtain oil, which it then spreads over its feathers with its bill. Of course oil and water will not mix, and, by keeping its feathers well oiled, the duck makes them just as waterproof as a rubber coat. Then, with its sleek, shiny surface feathers keeping all moisture away from its warm body-garments, the duck may waddle into the river and swim and dive as long as it cares to without getting either cold or wet.

The oily outer feathers also have other uses. Their smooth surface allows the bird to slip more easily through the water, and they also hold in the air among the body-feathers, with the result that this air acts like a life-preserver to hold the duck's body up high on the surface of the water.

In some way the flying birds are more puzzling to us than are the swimming birds. Eagles, buzzards, storks, pelicans, and many other birds are able to rise to a great height, sail round and round, and fly for long distances simply by spreading their wings. This kind of flight without any visible movement of the wings is known as soaring. Gulls often follow steamships in this way, keeping up with them for as much as a week at a time. The condors of the Andes Mountains have been seen to soar about five miles above sea-level! It may be better understood how high this is when one remembers the experience of Mr. James Glaisher, who made a famous balloon ascent in England in September, 1862. At two

THE HONEY-GUIDE AND THE HUMAN HONEY-HUNTER IN ALLIANCE

miles Mr. Glaisher reached freezing weather, and at a little over five miles—about the distance above sea-level where the condors were soaring—he lost the power of moving his arms and soon afterwards became blind and dumb for the time being.

Now a person who had never seen a bird fly without moving its wings would think that it could not be done. A bird is heavier than the air; it would therefore seem that the only way for it to stay afloat in the air would be to keep in such swift motion that it would not have time to fall. This is what an aviator has to do when flying in his heavier-than-air machine. If wings have been given to birds in order that they may develop enough speed to hold them in the air, how can birds stay up and fly wherever they wish to go without moving their wings? Do the birds let the wind blow them along? That cannot be the answer, for birds can soar when the wind is against them, or even when there is no wind.

It is true that birds have air-cavities in their bodies and bones and feathers which land animals do not have. The air in these cavities is of course warmer than the air outside, for the bird's body makes it so; and, as warm air is lighter than cool air, this would help to make the bird buoyant. But, even so, these air-cavities cannot be large enough to make the birds lighter than air. And so the question still remains unanswered: If a bird cannot float in the air, and is not blown along by the wind, how can it fly without moving its wings?

Still another mystery of bird life is connected with the manner in which the honey-guide makes its living. There are several species of these little birds, but the best-known members of the family live in South Africa. Now this bird is very fond of honeycomb; but, though it is easily able to find wild bees' nests, it is not strong enough to rob them alone. It therefore guides some stronger creature to the nest, with the hope that it will be rewarded with a part of the honey. Most commonly this stronger creature so guided is man. Dr. Sparrman, a naturalist who has studied the honey-bee closely, thus describes the manner in which the honey-guide leads a raid on a hive of wild bees:

"The morning and evening are its times for feeding, and it is then heard calling in a shrill tone, *cherr, cherr,* which the honey-hunters carefully attend as the summons to the chase. From time to time they answer with a soft whistle, which the bird hearing always continues its note. As soon as they are in sight of each other the bird gradually flutters towards the place where the hive is situated, continually repeating its former call of *cherr, cherr.* Nay, if it should happen to have gained a considerable way before the men (who may easily be hindered by bushes, rivers, or the like), it returns to them again, and redoubles the note, as if to reproach them for their inactivity. At last the bird is observed to hover for a few moments over a certain spot and then silently retire to a neighboring bush or resting-place. The hunters are sure of finding the bees' nest in that same spot, whether it be in a tree or in a crevice of a rock or (as is most commonly the case) in the earth. Whilst the hunters are busy taking the honey the bird is seen looking on and waiting for its share of the spoil. The bee-hunters never fail to leave a small portion for the bird, but commonly take care not to leave enough to satisfy its hunger."

The honey-guides are not tame birds, which have been trained to look for bees' nests and to bring their masters to the place where they might be found. These are perfectly wild birds, which have found out for themselves that if they will lead human bee-hunters to a bees' nest they will be rewarded. But how did they find this out? Why are they not afraid of the hunters? How did they first come to guide other creatures to the very food they like best? If the honey-guide is not trained to this work, it must do it as the result of instinct or thought. Which do you say it is?

VISUAL TEACHING OF THE DEAF IN HUMAN AFFAIRS[1]

BY MILTON FAIRCHILD
Director of Instruction, National Institution for Moral Instruction, Baltimore, Md.

Illustrated with Photographs by the Author

MANY arguments are available to prove the advisability of using lantern slides, made from photographs of real events in human life, as the basis for special instruction of the deaf. It is a well-recognized principle in education that a strong motive for learning awakens the intelligence and expedites the process of acquiring knowledge. There is pleasure and satisfaction in finding out, understanding, and repeating to others and using the facts one wants to know.

In general, education of both hearing and non-hearing children has failed in utilizing this principle. The real motive for school study is not immediate and strong in the child's consciousness. Grades and promotions are artificial motives which lose their force as the child becomes intelligent enough not to care about them. When the life-career motive takes hold on a youth it often transforms a loafer into an energetic, persistent worker and thinker. If we use visual instruction from what I call "life photographs," then the real world in which the boys and girls anticipate with eagerness their own participation will be related in their consciousness to the schooling they are getting in preparation for it, and motive for study will be furnished.

Some one, jealous of his teacher-reputation, says to himself: "That is not new, and we *are* always speaking of the real world; and, besides, the children see reality about them constantly." It is true, of course, that enough of this real world is brought into the school-room to prove the utility of the motives it supplies. I advocate an *adequate* use of real life-motives.

It is further to be remembered that seeing with the eyes of a child is not seeing with the eyes of understanding. A boy of ten sees a man watching workmen shingling a roof, but he does not understand that the man is the owner of this new house; that he has used his schooling to earn the money to pay for it; that he expects to move his family into it from a city flat, where his children are sickly, to this country home, where he hopes they will grow strong and intelligent sons and daughters, a comfort and pride to their mother and himself in their old age. The sight of the man does not mean much to the boy of ten; but it can be made to mean a great deal if it is explained.

We have been keen to teach children animal life; plants and rocks have been given meaning by instruction. But it is *human* life the child needs most to understand. Why not *teach* human affairs to children, and prepare them for taking their part in the world of human beings? They need this knowledge more than they need any other branch of knowledge.

We know this, but we have not acted on it, because we have assumed that the children would pick up this knowledge of themselves from parents, older children, and adult friends. But school motives are not gotten in this unsystematic and stupid way. Few parents know how to explain human affairs to children, and this, the most essential element in true education, must be supplied in school. If supplied in school it will awaken intelligence and give motive both to teaching and learning.

The method for instruction in human affairs is simple and inexpensive. Photo-

[1] Articles on this subject have previously appeared in THE REVIEW for October, 1909; The World's Work, for March, 1910, and The Independent, for October 26, 1911.

PICTURE TEACHING—I

Good manners when boarding a street car. Can a boy help this girl on, even though he does not know her? If he does so help her, does that give him a right to claim acquaintance?

PICTURE TEACHING—II

The life of a woman of wealth contrasted with that of the candy-vender. What service can each render others?

PICTURE TEACHING—III

Young men and women off for an outing. What are the obligations of the gentleman in social life?

PICTURE TEACHING—IV

Men greeting each other on the street. Courtesy and genuine friendliness are the essentials of the gentleman.

graphs of real events need to be shown, enlarged to almost life size by a projection lantern, and the interpretation and meaning of the details shown in the pictures taught skilfully while the vision of reality is before the children.

This is being done successfully in hearing schools. A stereopticon lesson on "What I am going to do when I am grown up," supplied by the National Institution for Moral Instruction, Baltimore, Md., was used by sixty grammar schools in Chicago last spring, with very satisfactory results, before an aggregate audience of 30,000 boys and girls.

Visual instruction of deaf children is already an achievement of the deaf schools. It simply needs to be broadened to include human affairs and morals.

The importance of this departure from custom in the education of the deaf is very, very great, indeed, and not yet appreciated by the professional teachers in deaf schools. The hearing child stands around watching and *listening* while adults work and talk. Something like an understanding of human affairs gradually comes to the hearing child through this process; and yet an adequate "wisdom" does not possess the hearing person until middle life is reached. The deaf child is cut off from this verbal outside-school education in human affairs and needs the more a thorough schooling in the significance of the things he sees happening in the life of adults.

The deaf child has a right to have his education adapted to his personal needs. It is unusually difficult for a deaf child to adjust himself to his *human* environment. His education should be directed with intelligent purpose to supplying him the necessary knowledge of human affairs to give him a good start in understanding the real world into which he must adjust himself when an adult. A wonderful enlightenment can be secured by means of visual instruction in human affairs in the deaf schools, and I urge attention to this suggestion.

PICTURE TEACHING—V

Children wandering the streets. The little girl is placed between the others for protection. What are the dangers to be avoided? This could serve as the introduction to a "picture excursion."

HUMOR FOR TODAY AND TOMORROW

BY LUNA M. BEMIS

Teacher of Phonetics and Visible Speech, New York City

"A little nonsense now and then
Is welcomed by the deafest men."
(Besides all the women and children.)

IN THE city of Peking resides an elderly missionary who has had thrust upon him, without solicitation, the condition of defective auditory nerves. In other words, he is deaf! The amount of sprightly fiction that he reads occasions surprise among his associates. If, however, his fellow-missionaries were deaf, they would not only not be surprised, but they, ten to one, would not hesitate to do likewise.

This hunger for the lighter touch, for the pleasant nothings in conversation—found so abundantly in our modern fiction—is present in the very make-up of those denied good ears. This hunger finds a fixed place in the ordinary mind as well as the trained intellect. To those who hear, the prattle of children, the chatter of innocent youth—any chance expression of good feeling—are a delight. They relieve the grind and worry of a day's work; they lessen the pressure of duty which so fills up the average existence. But a large part of this needful and rightful share of happiness passes by the deaf unclaimed. "The ripple of fun and all the light, healthful exchange of happy life—they see it go by silently."

Because of its rapid speech, not infrequently the witty remark is lost by a lip-reader and through a trumpet becomes "tinny." The mirth-making centers of the brain for producing the desired effect in language draw largely on voice qualities. Voice interpretation in every phase is therefore the most serious loss, psychically and socially, sustained by the deaf. "It seems to me that I do not know a bird till I have heard its voice," says John Burroughs. "A bird's song contains a clue to his life and establishes a sympathy, an understanding, between himself and the listener." In what greater degree is this true of humankind!

Granted, then, that a certain amount of the sunny side should have a place in the solution of *our* daily problems (I am one of the "deaffies"), it becomes us to make a constant effort in search of it—"that spontaneous radiance such as will smile its way into our hearts." Being denied the blithesomeness of the spoken word, there is always for us the joy of the printed page. If I can guide my kindred to a supply of fun, a source of nonsense all ready and waiting for them, these columns will fulfill their intended purpose.

American books for Americans has now become the slogan, although it was no longer ago than the Civil War that their books, like their coffee and textile fabrics, were not considered the best unless imported.

By divine right Mark Twain is prince of American humorists. His royal blood kept its virtue to the end. His mind was ever fresh and ever obedient to the laws of the kingdom to which he belonged—the kingdom of artistic writers. Here is his essay, J. Fenimore Cooper's Literary Offenses; let us examine it according to a minister's method—for quotation. (I am not a minister, though I once had the chance to become a minister's wife, and he was no "strawberry preacher," either.) He says: "Cooper's gift in the way of invention was not a rich endowment, but such as it was he liked to work it; he was pleased with its effects, and, indeed, he did some quite sweet things with it. In his little box of stage properties he kept six or eight cunning devices, tricks, artifices, for his savages and woodsmen

to circumvent each other with, and he was never so happy as when he was working these innocent things and making them go. A favorite one was to make a moccasined person tread in the tracks of a moccasined enemy, and thus hide his own trail. Cooper wore out barrels and barrels of moccasins in working that trick. Another stage property that he pulled out of his box pretty often was his broken twig. He prized his broken twig above all the rest of his effects and worked it the hardest. It is a restful chapter in any book of his when some one does not step on a broken twig and alarm all the reds and whites for two hundred yards around. Every time a Cooper person is in peril, and absolute silence is worth four dollars a minute, he is sure to step on a dry twig. There may be a hundred handier things to step on, but that wouldn't satisfy Cooper. Cooper required him to turn out and find a dry twig. * * * In fact, the Leather Stocking series ought to have been called the dry-twig series."

You have no need of an arc light to show you the rollicking good humor of this citation. It contains utter absurdity, finished off in Dr. Clements' most charming qualities of style.

When I mention the Cambridge humorist I speak as of one I love. His name is sweet to my mouth; it lends pleasant flavor to my thoughts. His juicy wit spilt over with every turn of his head, for the gladsomeness of Dr. Holmes was innate. He is a refreshing poet to the unfortunate. A visit to the public library shows that probably as large a number of his works as of any other author are produced in raised type for the blind. No deaf person reading these words should live another month without becoming familiar with his poems, "Contentment," "The Height of the Ridiculous," "Parson Turell's Legacy," "The Brown-stick Train." As you read them, one after another, you will pronounce each better than the preceding one. His "One-hoss Shay" is as merry a conceit as you will find during a day's journey in the land of laughter.

Here is a story of his early career that Dr. Holmes tells at his own expense. Before he had reached the height of his fame he was invited to speak from the platform in a certain hill town. It was off the line of the railroad, and he suffered all the inconveniences common to travel in New England during the early 40's to reach the spot. The subject selected by him was satisfactory to the committee in charge, and their financial arrangement was equally so to him. The sum named was, I believe, five dollars. The evening arrived, the audience assembled, and the lecture was duly given. During the night Dr. Holmes slept the sleep of the just. Thus far all went well. In the morning the committee waited upon him at his hotel and presented the munificent sum of two dollars and fifty even cents. They said: "The lecture was not as funny as we expected and we cannot pay you the full price."

If you relish mild ridicule of the artificial, read the "Autocrat." In it he declares that some of our mushroom poets construct their verse after this order:

.....youth
.....morning
.....truth
.....warning.

They first select their rhyming words, then fill in the preceding part of each line with anything convenient. I appeal to any poet among you if this method insures successful poetry.

The "Outlook" for May 27th recalls the bad-boy story of four decades past. I hope you will read the article. I hope you will get the book, "The Story of a Bad Boy," by Thomas Bailey Aldrich. Prepare yourself for a good laugh with loosened collar and belt unfastened; then read the episode of Bailey's Battery. You will certify that the mischievous pranks of 1870 are likewise the pranks of 1912.

Never was there a better example of phonetic spelling than in Josh Billings' Farmers' Almanak; I venture it satisfies even Mr. Carnegie. It affects the mind with the same surprise that one experiences in going around the corner of a

high building and coming suddenly face to face with a strong current of air.

Now a bit for the children of our great family of the deaf.

"Grin and begin to win!"

Thus preaches Billiken and straightway puts it into practise.

Though not our own native product, "Alice in Wonderland" is a good book to make your face wear a smile from cover to cover. What is this I hear? A whole series of chuckles at the bright tricks played by the words, a burst of glee at each unexpected turn of thought and idea. I believe the book has been translated into the language of every country where this magazine is likely to be read. It is probable that even our dear Mrs. Mills can have her Chinese children read it in their own tongue.

If you live near a public library—or, better still, if you possess one of your own—take down a volume of Joel Chandler Harris, or of Robert Burdette, or of Marietta Holley, or of James Whitcomb Riley. Any one of these popular jugglers with our risabilities will give you a pleasant hour and make you forget that good ears are necessary to the scheme of human happiness.

HOW THE TINIEST EGYPTIAN MOSAIC WAS MADE

ONE of the finest little mosaics in existence was made in Egypt many hundred years ago, and is now being shown by the British Museum. It is a small tablet on which is shown the picture of a hawk, every feather of the bird's wings being produced with a great number of colors and tints, each quite distinct. Though the tablet contains many hundred pieces of glass, it is less than half an inch square, and the whole work is so fine that a strong magnifying glass is needed to see all the details.

Most mosaics are made by fitting together many pieces of marble, glass, clays, or other substances, to form a pattern; but the pieces of glass in this Egyptian mosaic are so extremely small that they could never have been put together by hand. It has been discovered that this mosaic was made without tools, in the following way: Long sticks of glass of various colors were arranged in such a way that their ends produced the figure of a hawk. Thus when one looked through the bundle of glass sticks endwise, he saw the pattern, though it was immensely larger than it afterwards became. Then the whole bundle of sticks was heated till the sticks melted together, forming a thick, solid rod, and before the rod had time to become cool and hard it was drawn out, like molasses candy, till it became very long and thin. The picture of a hawk, made by the bundle of separate sticks of glass, was now melted into one piece and shown very much smaller than when originally put together. When the long glass rod containing the picture had cooled, a slice of it was cut off and polished. The design of course could be seen equally well on both sides of the slice, and many slices, each showing the same mosaic, could be made from the same rod.—F. K. N.

THE MÜLLER-WALLE METHOD OF SPEECH-READING

BRIEF REVIEW OF ITS GROWTH AND PROGRESS DURING THE LAST QUARTER OF A CENTURY—"THE BASIS OF THE METHOD IS DRILL OF WELL-ARRANGED SYLLABLES"

BY JULIUS MÜLLER-WALLE

IT WAS just twenty-five years ago, having been graduated from the Normal Training School for Teachers of the Deaf, that I journeyed to Hamburg, determined to found a school there. I felt that an attempt should be made to fill a vacancy which every earnest student of the methods of teaching the deaf must have felt, namely, a school in which the deaf adult who had lost his hearing, after having acquired the knowledge of speech and language, could be taught to read from the lips. That this school must be entirely different from that for deaf-mutes was very evident, and to prove this was the task I now set before me.

My attempt to start a school in Hamburg being without any success whatever, I proceeded to Bremen, hoping to interest the prominent aurists there; but again I failed. Moreover, I was told there by those in authority that many physicians were opposed to the teaching of lip-reading to the deaf adult, on the ground that the close concentration it required was a great strain on the nerves and would cause increased deafness. However, I did succeed in forming a class, and gave my first instruction in what is now known as the "Müller-Walle Method of Lip-Reading for the Deaf Adult."

In the fall of 1886 answers to my announcements in the Hamberg papers began to be forthcoming. The experience with the deaf adult which I thus gained taught me a few important facts, which proved to be most valuable. In the first place, I began to understand why most people even hesitated to inquire about this new method. Many, it seemed, believed that it involved the acquiring of a deep and profound knowledge of the physiology of speech; others saw only the possibility of reading the lips of those who had received instructions as to the proper way of moving the lips, at the same time making all sorts of gesticulations and movements with the arms, hands, and fingers which might suggest the spoken word. The fact alone that the public had begun to take notice of my announcements gave me great encouragement, for thus far I had not succeeded in interesting aurists or teachers. In fact, they were rather to be called my opponents than my friends.

It soon became clear to me, however, that I must begin at once to form a thorough and systematic outline of my plan of work. It was impossible to do this without a certain experience, which could be gained only through constant association with those for whom this method was intended. Thereupon I set to work, first of all, to gather together "all sorts and conditions of men"—young and old, cultured and uncultured, professional and society people—and while my pupils were profiting by the carefully prepared and graded syllable exercises, I was getting the much-needed experience. I encouraged my pupils to return after having completed the regular course and to continue practising with the newcomers. In this way many acquired great proficiency in reading the exercises.

I recall particularly one pupil who acquired remarkable speed in repeating the syllables and far outdid the rest of the class. She was considered by all to be almost a wonder. But before long I made the surprising discovery that, while she had accomplished so much in the class-room, she was utterly at sea when she tried to follow general conversation,

while her less proficient classmates, who had spent more time in the observation of those about them and had applied the syllables to new words and new combinations, excelled her in conversation. This little experience taught me that the systematic practise of syllables is by no means the only thing necessary, and that general conversation should be an important factor. So I arranged a series of exercises comprising short sentences, which by means of questions could be made the subject of conversation. The lessons were now so arranged that the syllables taught and practised during the first half hour were brought into the conversation during the second half.

The question now arose in my mind as to the amount of time that should be spent on syllables, and I soon came to the conclusion that here the individual pupil must be considered. The older pupil, who naturally would wish to apply his knowledge as soon as possible in general conversation, should have more sentence practise, while the younger student, whose education was yet incomplete, should remain longer on the syllables, thus training the eye to greater accuracy in detecting the slightest change in movements and enabling him to read the individual syllable, which the older student would recognize only in association with familiar words and phrases. Later a pupil who has been well drilled in syllable practise would have an advantage over one who had not practised the syllables so carefully in reading accurately each syllable in a sentence.

The following illustration will serve to make this clear. The teacher says, "Good morning. How did you sleep?" This sentence would be read at once by all the pupils. But if he said, "How did you sleep?" the word "sleep" would be read only by such pupils as had been well drilled in reading syllables. From an educational standpoint I naturally preferred to dwell longer on the syllables, but the experience with the individual pupil taught me that the adult who wishes to make practical use of his knowledge as early as possible should be drilled quite as much in sentences and general conversation.

It had also come to my notice that the close observation of syllables led the pupil to concentrate all his attention on details. For example, a pupil was shown the difference in the cheek movement between *ä* and *ō*, the teacher naturally holding his head as quiet as possible. Now as this difference was seen when the speaker's head was in a quiet position, the pupil was immediately disturbed when in conversation the speaker moved his head. Thus we were forced not only to change our position while sitting in front of a pupil, but also to walk about while giving the sentences. Pupils were moreover urged to practise sentences with each other, in order to see the movements made by the different speakers. Thus for a time syllable practise was separated from the drill on the sentences.

But the basis of the method is, and always will remain, the systematic drill of well-arranged syllables. The main object of systematic practise is to train the eye to perceive, combine, and distinguish rapidly the outward movements of the different organs of speech; not, however, to give the pupil a large number of new and ever-changing subjects. These will be introduced as soon as the time comes for general conversation. In practising, it is not the quantity nor the nature of the subject, but the correct arrangement and treatment of the same that must be considered the most important thing.

Now in giving a group of new syllables, only the principal movement of each is shown. First, the vowel is changed; for example, fä—fō—fōō. Next, the consonant preceding the vowel; as, fä—sä—mü; and, finally, the consonant following the vowel; as, af—as—ap, etc. Since in reading the lips it is not a question of reading a single sound when spoken alone, so the sounds should be shown in the syllable.

Although the pupils' attention is called to the slight changes which one sound gives to the syllable, yet a single sound is not practised alone. Words do not

consist of individually spoken sounds, but of closely connected sounds. The passing from one sound to another demands another special movement, which we may call inter-movement, just as in painting we speak of shades where one color gradually blends into another without showing where the former ends and the latter begins.

Furthermore, a sound, when pronounced alone, has a different movement, often the opposite movement from that pronounced in connection with other sounds. For instance, if I say, "She may owe them the money," we have a forward movement for *ō;* but if I say, "You owe them the money," we have a backward movement for *ō.*

This, then, is the order of my method. We have nothing to do with single sounds, since the movements vary in different connections. One single sound prolonged is a *position,* but the passing from one sound to another is *movement.* Therefore, in order to read general conversation from the lips, we must learn to combine rapidly the visible characteristics; that is, we must learn to follow movements rather than positions.

On careful study, lip movements show many characteristics which help us to differentiate them, as direction, time, measure, duration, accent, and classification. The vowels are recognized by the direction and by the degree of mouth opening. In a combination with *"l"* after a consonant before a vowel—for example, in the syllables fa, fla—the attention of the pupil is called not only to the position of the tongue after *f,* but to the difference in duration of the syllable. Fa is shorter than fla, since two sounds can be pronounced more rapidly than three. In showing the difference in the combinations "to me," "to him," "to her," the pupil is told that in pronouncing "to me" the lips are closed in the middle of the combination; in "to him," at the end, and in "to her" they remain open.

Thus the single sound is supplanted by the combination of sounds. The teaching of the movements of these combinations thus became the foundation of my method, and with this new method I obtained results which satisfied the aurists. Six years had elapsed since I first went to Hamburg, and now gradually the aurists began to look into my method. Dr. Urbantschitsch, of Vienna, was the first to recommend me to his patients. In 1893 Dr. Lucae, of Berlin, wrote a preface for the book which I was about to publish. Shortly after this I began to have pupils from Russia, England, and America, proving that the method was rapidly spreading.

One of my American pupils,[1] having completed the regular course, decided, upon my suggestion, to continue the study and prepare to open a similar school in the New World. She not only completed the normal course in German, but also translated the entire method into English. In 1902 she founded a school in Boston, Mass., which is now one of the largest and most successful schools of its kind.

This led other pupils in Germany to make a more thorough study of the art, and I then opened normal-training classes in different cities. Thus not only have the deaf adults been benefited by the method, but a new field of work has been opened for those who, having lost their hearing in adult life, are forced to earn their living. Schools have been opened in Dresden, Leipzig, Wiesbaden, Hanover, and various other cities by normal graduates.

[1] Miss Martha Bruhn, of Boston, Mass.—Ed.

WHAT THE TEACHER DESIRES IN THE PRINCIPAL

BY T. C. FORRESTER

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WE HAVE been so accustomed from our youth up to look upon the principal or superintendent (these two terms being used synonymously in this article) as a perfect and an upright man, that to write an article under the above title almost sounds like heresy. It was well, too, we had a wholesome respect for him. But as we have grown in wisdom (?) and stature we have come to the conclusion that even some principals may not have yet altogether attained to these superlative conditions.

Some teachers desire much in the principal, and sometimes a particular member of the staff may desire something which to the other members is rather objectionable. Since the days when Sartor Resartus was penned the tailoring business has taken considerable strides; and now, by an ingeniously devised system of self-measurement, a man may send his order for a suit of clothes and have them by return mail. This self-measurement idea is occasionally applied in the mental and moral spheres, with the result that in almost every school one finds a teacher who desires the honorable position of adviser-in-chief to the superintendent—a laudable ambition indeed! This estimable lady or gentleman, however, often fails to recognize the fitness of several others to fill the same high and lofty office, and occasionally the superintendent himself, good, honest man though he be, also fails in this respect. With apologies to Scotland's immortal bard:

> O wad some power the giftie gie them,
> To see themsels as we can see them.

There are, however, certain things which every capable, conscientious teacher has a right to desire of the superintendent, and those desires may be disposed of in the psychological order beginning with the sensations. The senses of taste and smell have generally been considered the lower senses, as they present a decidedly low measure of refinement, though it is true they give us at times a great degree of pleasure or pain. The teacher desires good, wholesome food; not what you would expect in a ten-dollar-a-day hotel, but good, plain, nutritious food, well cooked and nicely served. This is every resident teacher's right; but of course when eggs are seventy-five cents a dozen the eggs must sometimes be fish or bacon. Some slanderous woman (no sensible woman, of course, would ever dream of such a thing) has vulgarly remarked that the main road to the seat of a man's affections was through his chief digestive organ! But on second thoughts we are inclined to think that perhaps there is a certain degree of truth in her judgment, after all. Indeed, we shall be more gallant than we were at first, and give her more credit. Good meals do bring a great measure of satisfaction to men and to women, too, forsooth—dyspeptics, of course, excepted. And the work of a satisfied teacher will surely be of a higher order.

With good food might also be coupled good, comfortable rooms, where the furnishings are neither shabby nor mean, but also, with the furnishings of the table, such as will not be offensive to a refined taste—simple and plain, if you wish, but of good quality. The wise superintendent is not parsimonious in these respects. In past years there have been one or two principals who made a boast of the low expenditure of their institutions. The teachers in some of these schools spent considerable of their salary in downtown restaurants. The modern principle is not, how cheaply, but how efficiently. And we honor those gentlemen who follow it, and who would rather stand for criticism from their leg-

islatures or boards of trustees than sacrifice the good of those committed to their charge.

The present needs being satisfied, we shall consider wherewithal he shall be clothed in his old age. In short, the teacher desires to be so paid that he may have the necessaries of life and put a little by for a rainy day. It is said the cost of living is getting higher every year. Probably it is; but the people of the twentieth century are not content to live as plainly as did their forefathers. The eminent educator and divine, Dr. Patton, of Princeton, once remarked that of course living was higher, and partly explained the cause by observing that it taxed the French language to find names for the dishes that replace the once "hamely fare." The laborer is worthy of his hire, however. Unfortunately the superintendent has not always the power to remunerate his staff as he would wish. He has to cut his coat according to the cloth, which is sometimes merely a remnant after certain corporate gentlemen, wire-pullers, and legislators have had their own coats made out of it.

The teacher desires that the principal shall support him in matters of discipline before the pupils. The principal should never support a pupil at the expense of the teacher; otherwise the discipline of the school will suffer. If the teacher is at fault, then the criticism should be done in the absence of the pupil.

The teacher desires that the principal give him full credit for what he accomplishes. It would be just as difficult for a good principal to manage a school with poor teachers as it would be for an experienced mariner to take a ship across the Atlantic with a crew of tailors instead of able-bodied, weather-beaten sailors.

The teacher desires that his principal will not stand in the way of his promotion. The writer recalls a certain school where the principal, a reverend gentleman, made a rule that none of his teachers should attend evening lectures. The school was only a stone's throw from a famous seat of learning, but the principal feared that more learning was a dangerous thing for him, as his teachers were thereby enabled to obtain higher positions and their cheap services thus lost to the school. This gentleman died, and was buried.

The teacher desires sympathy in the principal. The thoughtful, resourceful teacher is always finding out some new way of presenting his subject, and takes delight in imparting his discoveries or the results of applying certain methods. Teaching is arduous work at the best, and a little sympathy from the principal is encouraging.

Punctuality is also to be desired in the principal just as much as it is in the teacher. The unpunctual principal, who has no regard for time and place, cannot look for respect or punctuality in his teachers.

It goes without saying that the more a principal knows, especially regarding the education of the deaf, the greater will be his influence in the school, other things being equal, of course. Neither would it hurt some principals if their teachers got a little insight into the business side of school affairs some time previous to assuming the management of a school. The writer had the good fortune to have this training under a principal who was considered one of the best institution managers on the continent. It has been hinted that some superintendents are not disposed to give teachers this training, as their own positions would thus be jeopardized. Teachers capable of undermining their superintendents have missed their calling. The bucket-shop would be a fitter place for their talents.

In some contracts the writer has seen the following: "The teacher shall perform cheerfully all duties required of him by the superintendent." If the teacher is given a fair idea of what these duties are before he signs the contract, then the above is in order. If he is not, then the above rule is arbitrary, mediæval, and altogether unprofessional. It puts the plumber and the bricklayer on a much higher level. The principal

has no right to encroach on the teacher's own time outside of his regular hours on duty. At the same time the teacher who is valuable around a school is the one who is "ready, aye, ready," to put his shoulder to the wheel, and one who, of his own free will and accord, will devote some of his leisure time to the interests of the school. But every teacher should know what may be expected of him, as willing service is always more valuable than that which is done grudgingly.

The principal should be a man in whom the teacher can place absolute confidence, and a man who can keep a still tongue regarding his own affairs as well as the affairs of others who have reposed confidence in him. He must also be a man who will not stand for tattling, but who, when charges are made against a person, will give that person a proper hearing in the presence of the accuser. This is both etiquette and equity.

Where is the ideal principal? Probably no two teachers would have the same idea of what the ideal principal should be. And if the principal endeavored to please everybody he would surely be like the man with the donkey. If things do not always go the teacher's way, there may be a good, justifiable reason for it. Then, too, the principal is neither omniscient nor omnipotent. So "all hands to the oars, boys; a long pull, and a strong pull, and a pull all together."

PROGRESS OF SPEECH-TEACHING IN THE UNITED STATES

BY HARRIS TAYLOR, Superintendent of the Volta Bureau

THE American Annals of the Deaf for January, 1912 (Vol. LVII, pp. 32 to 52), contains the usual statistical tables concerning the pupils and teachers present in American schools for the deaf on November 10, 1911.

The figures show that during the year ending November 10, 1911, the number of schools for the deaf in the United States increased from 145 to 148, the number of pupils from 12,332 to 12,588, and the number of teachers, including industrial teachers, from 1,673 to 1,706.

The number of public schools remained unchanged; four public day schools were established and two were discontinued, and one private school was established.

It is interesting to note that, while the increase in total number of pupils for the year was 256, the increase in the number taught wholly or chiefly by the oral method was 557, from which we may infer that practically all new pupils received oral instruction, and that, in addition, a considerable number of older pupils were transferred from manual or combined classes to oral classes.

The number of literary teachers increased from 1,303 to 1,317, whereas the number of articulation teachers increased from 806 to 962. The total increase of literary teachers, including articulation teachers, was only 14, whereas the increase of articulation teachers was 152. With the total number of literary teachers practically stationary, we find a surprisingly large number of teachers have changed from manual to oral methods of instruction.

The following tables relating to the growth of speech-teaching from 1893 to 1911, inclusive, are compiled from the Annals, with percentages computed from them:

TABLE I—PROGRESS OF SPEECH-TEACHING IN AMERICA, AS REPORTED IN THE ANNALS

Year.	Total schools.	Total pupils.	Number of pupils taught speech.			Percentage of pupils taught speech.		
			A	B	C	A	B	C
1893	79	8,304	4,485	2,056	80	54.0	24.7	0.96
1894	82	8,825	4,802	2,260	109	54.4	25.6	1.24
1895	89	9,252	5,084	2,570	149	54.9	27.7	1.61
1896	89	9,554	5,243	2,752	166	54.9	28.8	1.74
1897	95	9,749	5,498	3,466	162	56.4	35.6	1.66
1898	101	10,139	5,817	3,672	116	57.4	36.2	1.14
1899	112	10,087	6,236	4,089	128	61.8	40.5	1.27
1900	115	10,608	6,687	4,538	108	63.0	42.8	1.02
1901	118	11,028	6,988	5,147	73	63.4	46.7	0.66
1902	123	10,952	7,017	4,888	63	64.1	44.6	0.58
1903	128	11.225	7,482	5,433	100	66.6	48.4	0.89
1904	133	11,316	7,601	5,508	154	67.2	48.7	1.36
1905	128	11,344	7,700	5,733	149	67.9	50.5	1.31
1906	132	11,648	7,846	5,645	152	67.4	48.5	1.31
1907	137	11,648	8,040	6,500	148	69.0	55.8	1.27
1908	141	11,990	8,299	6,760	143	69.2	56.4	1.19
1909	144	12,046	8 590	7,238	166	71.3	60.1	1.38
1910	145	12,332	8,868	7,562	134	71.9	61.3	1.09
1911	148	12,588	9,302	8,119	158	73.9	64.5	1.25

A. Number taught speech.
B. Number taught wholly or chiefly by the Oral Method.
C. Number taught wholly or chiefly by the Auricular Method.

TABLE II—INSTRUCTORS OF THE DEAF

Year.	Total teachers.	Industrial teachers.	Not including industrial teachers.		
			Total teachers.	Articulation teachers.	
				Number.	Percentage.
1893	....	...	765	331	43.3
1894	....	...	784	372	47.4
1895	....	...	835	397	47.5
1896	....	...	879	427	48.6
1897	1,188	260	928	487	52.5
1898	1,253	304	949	530	55.8
1899	1,309	323	986	561	56.9
1900	1,353	343	1,010	588	58.2
1901	1,385	358	1,027	641	62.4
1902	1,388	349	1,039	664	63.9
1903	1,438	373	1,065	696	65.4
1904	1,453	328	1,125	734	65.2
1905	1,491	332	1,159	749	64.6
1906	1,525	351	1,174	765	65.2
1907	1,552	359	1,193	767	64.3
1908	1,648	394	1,254	836	66.6
1909	1,634	381	1,253	860	68.6
1910	1,673	370	1,303	896	68.8
1911	1,706	389	1,317	962	73.0

The figures in these tables have been carefully compared with the original sources of information in the Annals and in THE REVIEW to secure accuracy.

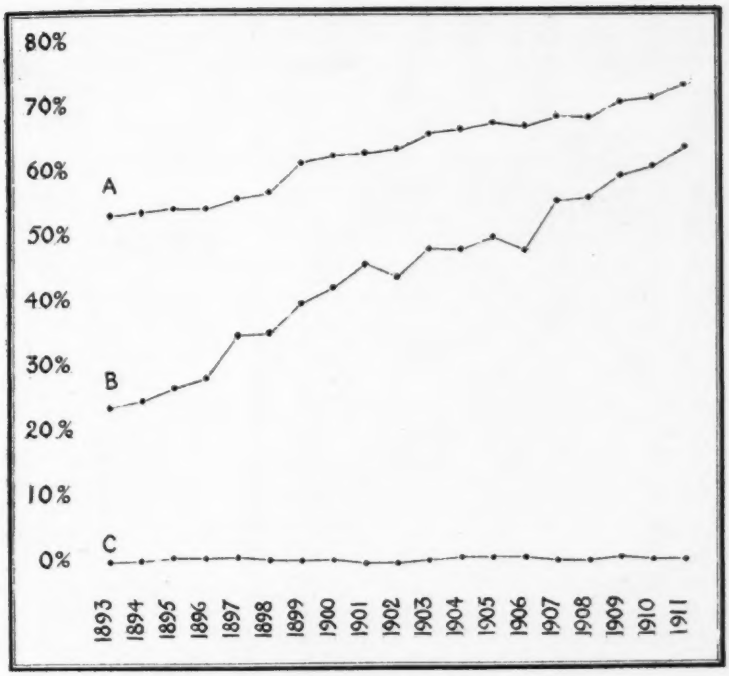

DIAGRAM ILLUSTRATING TABLE I

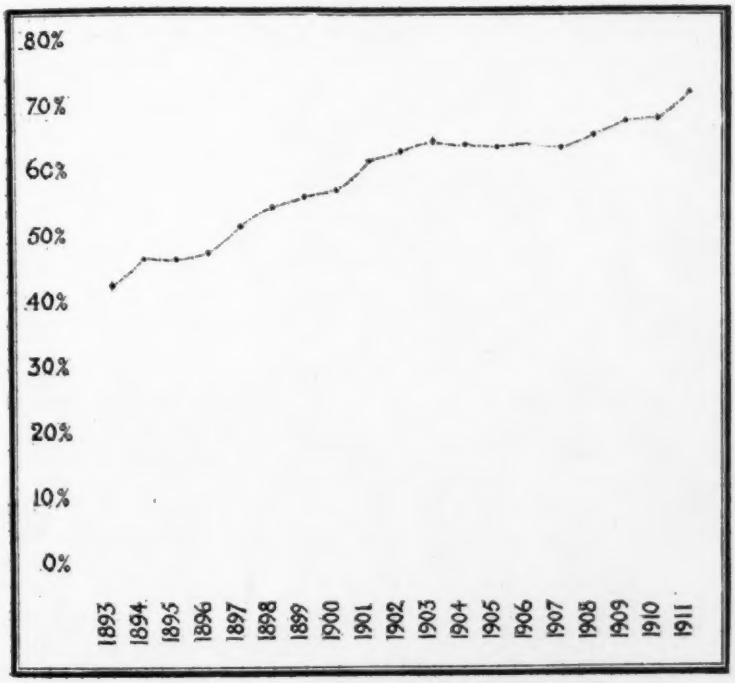

DIAGRAM ILLUSTRATING TABLE II

REMINISCENCES OF A RETIRED EDUCATOR

BY RICHARD ELLIOTT, M. A., L. H. D.,
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XXVI

EDUCATIONAL AND ADMINISTRATIVE PROGRESS

THE experiment of teaching by the oral method having been considered to be successful, my committee, in 1885, formally adopted it as that upon which instruction should be based whenever possible. This resolution followed upon an exhibition of the results shown to the full committee, which convinced all, even the most prominent member, although he had come prepared, as he afterwards told me, with a resolution to move its rejection.

It became necessary to rearrange the accommodation. My own idea being that government intervention was inevitable and imminent, and that whatever might be done would materially modify our position, I thought it would be more advantageous to our interests to delay the reconstruction until an indication was afforded of the measures likely to be taken. But this view did not approve itself to the committee, and they decided to discontinue the exclusively oral school at Ramsgate, to enlarge the institution at Margate, and to re-erect on the Old Kent Road site a building to be used as a preparatory school.

This arrangement necessitated the mixing of the children hitherto taught on the "pure" oral system with those silently taught; and henceforth, although instruction in the oral classes was continued as exclusively oral, we could no longer class this department as a "pure oral" school. I was sorry for this. Circumstances thus undesignedly brought about an arrangement in which, out of school, those taught by the several systems mixed freely and communicated with each other by means of signs and the manual alphabet. At first the non-oral were in a large majority, but eventually those taught by the respective systems came to the proportions circumstances during the whole remaining period of my superintendence seemed to indicate as normal, namely, 75 to 80 per cent taught orally, 25 to 20 per cent taught otherwise. I am bound to say that by the arrangement here indicated, which was not formally adopted but grew up out of the measures taken, I found some advantages, and fewer disadvantages than I had anticipated. There was for me, however, no choice in the matter, and in this, as in all matters pertaining to the work, the wisest course seemed to be to make the best use possible of the means provided.

Additions were made to the Margate School of a detached wing, containing twelve class-rooms. We came into occupation in 1887, when the temporary school at Ramsgate was discontinued.

The new building in the Old Kent Road was opened in the same year, with an extra number of new children, and henceforward it was continued as a preparatory school until it was closed. The children, who eventually numbered 90, remained under training at first for one year, afterwards for a year and a half, and then were transferred to Margate. The old site had been used for the institution, which was well built and was attractive in appearance. The arrangements for sleeping, feeding, and washing were excellent and fully up to date, but far from perfect in space, lighting, or any of the concerns of education. Eventually the committee decided that, notwithstanding the long connection of the institution with its historic site and its metropolitan

character, it would best conduce to its interests to concentrate the whole establishment at Margate. The building was accordingly vacated; and, being put up to auction, was sold at a considerable sacrifice, in 1902, to the School Board for London. This body and its successor, the London County Council, has continued to use it, after various alterations, for the education of the deaf, so that their connection with the old locality is still maintained.

The reorganization thus introduced fell into working order, but matters had not reached finality; and, notwithstanding the salubrity of the neighborhood and the extreme care and attention given to the children's health, their enforced non-attendance at lessons was often a source of disquiet, for an unhappy succession of epidemics at times materially interfered with the work of instruction. These were always of a mild nature, except for the numbers involved, and in only a very few cases were there any untoward results. The strictest precautions were taken and the utmost care observed. There was, if anything, an excess in these directions, and one looked back with wonder to the past, when practical immunity from such trouble seemed to exist, notwithstanding the far less careful attention they paid to hygienic matters. May there not be a point where such excess may lead to a dislocation of ordinary proceeding almost or quite as tiresome to deal with as an opposite extreme? Matters concerning health in a large aggregation of children are always an anxious problem, and seem to become accentuated in proportion to their increase in numbers.

My experience seems to show me that one of the greatest essentials for young deaf children is warmth. No one would minimize the importance of good air, but when, as in the cold time of the year, it comes in the shape of draughts impelled by a bitter east or northeast wind, there may be too much of it to be either pleasant or healthful. I think "fresh air" has become a fetish which many unreasonably worship. Devotees, themselves well wrapped up, and, besides, glowing with exercise taken in the open air, have sometimes come into our rooms on a cold day complaining that the warmed atmosphere in them was "close," or "stuffy," not remembering that the poor children were in their indoor clothes and sitting still. Such an opinion, of course, must be followed by the opening of the windows and the consequent inrush of air many degrees colder, for there seems to be as yet no more effectual means of introducing "fresh air" than by admitting it by that means.

It seems to me that such warm air, even if "stuffy," as complained of, would be less dangerous, as it certainly is more conducive to comfort. The regulation of the temperature of the rooms, where active exercise cannot be taken, in our institutions, so that a sufficient and equable degree of warmth may be secured, is a difficult matter. I always provided that attendance in the comparatively small class-rooms should not last longer than one and a half hours at a time.

In 1892 I succeeded in inducing my committee to make a provision for teaching the boys technical work in the form of woodwork sloyd. Our example in this was the Manchester Institution, in which I think the headmaster, Mr. Bessant, had the honor of being the pioneer of such instruction to the deaf in England. We secured the services of an excellent teacher, who made the undertaking very successful. The boys took to the work with eagerness, and would always far rather go to it than to play. I had long been anxious to introduce some such form of technical instruction, and had proposed, when the temporary iron school-room was removed from Ramsgate, to devote it to such a purpose. But that of a gymnasium approved itself as more desirable,

and accordingly from that time it was so used. Systematic instruction to a proportion of the boys and girls was given with considerable physical advantage, and by their progress in it they showed themselves able to equal if not to surpass ordinary children.

I was sorry not to be so fortunate in my advocacy of technical training in the case of the girls. Well-intentioned ideas, having reference to their social standing in the affairs of life and of considerations for the more economical administration of the institution, put upon them an increased amount of domestic work and a consequent decrease in the time for education proper. Had this work been of an educational nature, one could have looked upon it with approval, but in the form it had to take, which seemed to be merely that of relief to the domestic staff, one had to hope that views would eventually prevail which should be more in harmony with educational necessities. And in time this did come to pass, for after some years the incidence of work was gradually relaxed and principles in accordance with government requirements, which professedly and wisely make education the first consideration, were fully complied with. I was glad to see in 1906 my long-desired wish for the systematic instruction of the girls in cookery provided for.

My persistent advocacy of what I deemed to be improvements was, I am afraid, sometimes unwelcome; but events in education were moving at so rapid a rate that all such barriers as a mere *laissez-faire* policy might oppose disappeared, and, further, resulted in transforming some of the formerly most conservative bodies into active advocates of an almost opposite extreme of action to that they formerly favored.

Exhibitions of the oral work done were given at the Old Kent Road School at Christmas in 1890 and also in 1891, and received much praise from the London press. As these notices were probably the first of the kind, I make a short reference to them here. We had had such performances each winter at Margate, at first in pantomime but afterwards by speech. Latterly they took the form of scenes from English history, presented in spoken dialogues of considerable length, and in which the teachers and I coached the children. In 1890 it was the history of Richard III that was given. Necessarily the names and events illustrated were similar to those in Shakespeare; and, although not the remotest thought occurred to us to connect our humble presentment with that of the "immortal bard," yet by some means paragraphs went the round of the papers stating that deaf and dumb children were performing Shakespeare. A large company assembled to see the performance, including the then Lord Mayor (Sir Henry Isaacs). The "Times" notice said: "The children spoke their parts very plainly and intelligibly. Their success was a remarkable testimony to the care and patience with which they have been taught." Another newspaper said: "It was a very remarkable and most interesting scene," and added, "The acting, too, in many cases was exceedingly good, and the whole performance was marvelously well rendered." The Lord Mayor, who claimed to be the first to introduce the oral system into England, for the benefit of his own deaf daughter, said "he had not only seen the performance with interest, but also with absolute astonishment," and that "notwithstanding all his knowledge of the subject he had not expected at all the results he had witnessed."

A similar and last performance took place the next year, illustrating the life of Henry V. But the public Christmas prize-giving at Margate being discontinued and the London school no longer available, these Christmas celebrations were discontinued.

THE DEAF CHILD'S HOME TRAINING

Conducted by MRS. J. SCOTT ANDERSON, Swarthmore Home for Deaf Children

A DEPARTMENT TO AID THE MOTHER IN THE REARING OF HER DEAF CHILD—INQUIRIES WILL BE ANSWERED BY THE EDITOR

RICHARD AT SCHOOL

Having made himself at home with us, Richard was ready to learn. He could, and did, explain anything he desired us to know. His gestures were perfect—they told a whole story in half a minute and held us spellbound during the recital. His little mouth would move, usually with no voice, but when excited or laughing his tones were sweet and clear. He had a habit of imitating the lips of those around him without paying the least attention to the meaning of what they said. He did not, so far as we could learn, associate any of these words or sentences with what they meant. It was parrot imitation. Still this imitation was worth a great deal, and was much from a child who had never been taught to notice the lips of others.

We had, then, three things upon which to base our instruction:

1. Richard was well and strong—the most important thing.
2. Richard had wonderful mentality, as was shown by his gestures.
3. Richard wanted to, and did, tell us all kinds of things.

In other words, he could notice, associate, and act in a correct fashion. His brain was as perfect as any little child's could be—except that, owing to his deafness, the centre of hearing was inactive.

The first day at school Richard was too greatly interested in the other pupils to do much. He liked the companionship of the others, and noted carefully everything they did. We opened school at nine o'clock, and as Richard needed a little "community spirit" we permitted him to attend the opening exercises, which consist of a few simple questions by the teacher, answered by the pupils and followed by the Lord's Prayer. To all of this Richard paid strict attention, forgetting to be the centre of observation. In the kindergarten his eyes opened wide as he surveyed the mysterious boxes. The color work was given first, and Richard was very quick to learn. He had never been taught the colors, but after having been shown once he never forgot. The teacher held up a skein of red worsted, and he examined it. Then she replaced it in the basket, mixed it with skeins of other colors, and handed the basket to him. Out he pulled the red, quick as a flash. After he had matched it to his sweater, a ball, and several other things, he was ready for another color, though this was not given to him until the morrow.

We were sure, the next day, that Richard loved his kindergarten, for as soon as the opening exercises were over he ran to the little table in the adjoining room and gave a little squeal of delight. One day, when he was learning to recognize violet, he pointed to the upper window-sash. This was a stained-glass window, and there in the centre was a tiny circle of pale violet. I had lived in the house over five years, and did not know that any such color was in that window. To add to the difficulty of finding it, there were white scrim curtains between Richard and the window! It was not long before he knew all the colors of the rainbow, and could match them to any object.

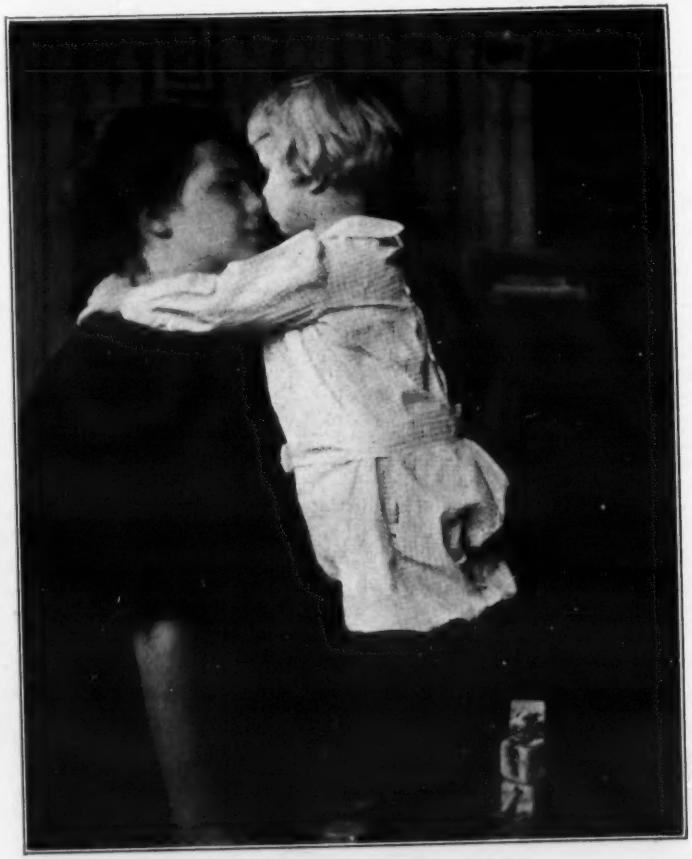
In all his work he did well, though he would often fool us. Sometimes he would look at us with half-closed eyes and droop his head, until we were sure the dear child was "too sleepy to do anything at all." As soon as we concluded this, and changed our minds about the kind of game, or whatever we were doing at the time, Richard would lift his head, brighten up and be "himself again." We found out the little rascal's trick only when he tried it successfully several times at table. As soon as the rejected food was removed, he was ready and wide-awake for the next course. This explained his sleepiness at other times; but after he found out that we knew, he was not inclined to be sleepy. How we loved him for all his little ways, every one of which was just so much capital to him, for they made an irresistible sum total.

Richard's teacher, singing into his ear, found that the supposedly totally deaf little boy had sufficient hearing to enjoy rhythm. Thus he was made aware of voice. After listening with delight for a time, he insisted upon singing into her ear, "La-la-la-la!"

Children learning to read simple commands (as a whole) from the blackboard. Having performed the act, they look to the teacher for approval.

"La-la-la-la!"

Richard learns to place upon a cup a slip bearing the written words "a cup." A ball, a spoon, a fork and a knife have already been mastered.



Richard learns to lip-read "Kiss me."

His touch work was splendid. Beginning school on October 3, he was ready by December 10 to work on the string frame. With eyes shut, he could tell the difference between various pieces of silk, cotton, velvet, and other goods by simply feeling them.

As for language, he was able to put the slip bearing the written word "a cup," "a spoon," "a ball," "a knife," "a fork," and "a pencil" upon the objects themselves.

Lip-reading was not so easy for him. He could, however, lip-read all the above names (giving the teacher the things asked for), and, in addition, would perform the correct act when she would say "Jump," "Bow," "Fall," "Clap your hands," "Fold your hands," "Hug me," "Kiss me," "Walk," and "Wipe your mouth."

He could weave linen mats (one-half inch strips).

He could sew simple cards, and with crayons color the designs very well indeed, seldom going over the edge and doing them very evenly.

The games he learned were old maid and hide the thimble.

Picture puzzles of all kinds but the jig saw variety were easy for him, although he had done nothing of the kind before coming to us.

Gymnastics of the larger kind, such as leg and arm movements, were not difficult for him to master, and he learned even some of those more directly connected with articulation, such as curling the tongue up and then down and drawing it in and then out, as well as the exercise of shutting the mouth slowly, then rapidly, opening it in the same way, and so on.

His articulation proper was most limited. He could give a good "ä" and a "p" (of course these were in imitation of his teacher, not read from the blackboard or chart), was able to give breath whenever required, and could give voice as told. He could say "Mama," properly accenting the first syllable and making the last one rather indefinite, and he would say "arm" if anyone pointed to somebody's arm.

Number we had not touched during those few weeks.

This seems like a long list of things accomplished, but it is not. Far in advance of all the words or sentences read from the lips was the general improvement of the child's observation. We knew that there would be plenty of time to obtain correct articulation and much besides. What we wanted was that the baby should be kept happily busy and his attention called to things that he would have to attend to later in life. Nor was what he had learned mastered without effort. He was constantly talked to, constantly made aware of other people's interest in his success, and constantly helped by every member of the school family.

When it came to formal lip-reading (as I call commands which are given as a drill rather than to fit the occasion), there was no response from Richard for a long time. He was far slower than any other three-year-old that I have ever taught. At first this troubled me. Finally I concluded that he wouldn't do what I wanted him to—out of pure mischief he *wouldn't*. When asked for a fork he would give the ball half a dozen consecutive times, even though I shook my head and said "No" each time. Solemnly he would look at me, and once again present the ball. When I was sure that he knew what I wanted I marched the young man into the corner. It was hard to do it, for he was so good every other way. The result was that Richard seldom was inclined to do an incorrect thing twice.

Sometimes he frankly refused to do as told, it made no difference how much we coaxed. One day, in the midst of outlining a circle in worsted on a heavy card, he stuck his needle in the centre of the circle, laid the card on the table, and, still seated, with arms akimbo, quietly but determinedly shook his head: "No." At such times he was more lovable than ever, if that were possible, for the very size of the little fellow made such mutiny amusing. But we knew full well that we must not pay too much attention to these things, else he would discover that they provoked a smile or a desire for victory on our part, either of which would be fatal to successful instruction, and so undo all the good that had been accomplished.

What we were proudest of in Richard was his ability to "give voice." Voice had been a difficult thing with Richard, but even that he did well in the end. In vain I had tried to have him make some sound when he had moved his lips in imitation of others. He could not comprehend what I wanted him to do. His little mouth would open and shut, pucker up and straighten out, but never a sound could I get from him. I used my finger-tips, placing those of one hand on my throat and those of the other on his, and had him do the same while I said

"ä," so that he could feel the vibrations in my throat and imitate them. It was of no use. The fingers and tongue did their best, but not a sound was there to be felt. There was no voice. Then I concluded that, as soon as practicable, I would work with "hearing," although he had never shown the least bit of interest in things that make a noise. He was altogether deaf, I had been assured.

The science of teaching is a negative one sometimes, for it requires as much knowledge to know when and what *not* to teach as when and what *to* teach. I have used the word "teaching" in its widest meaning. We say that the baby has learned to walk, has learned to say "Mama," has learned to wave his hand. Anything that has helped him do these things has helped teach him. The world is as great a teacher as the man or woman in the class-room. Everything teaches. It is only a matter of the kind of instruction that is given, whether it be good or bad, interesting or otherwise, true or false. Our very thoughts are teaching us. How carefully, then, should we who are constantly associating with little children guide their steps. We must use everything which is at hand to help teach these children how best to live in their surroundings and how best to meet their future needs.

This may seem a long way from teaching voice to a three-year-old deaf baby, but it is not. I had learned that this little boy could not, as yet, be made to understand what voice is by the usual methods, so I concluded to let them alone, see if I could find in him any trace of hearing, and so secure voice. He was pretty young to expect anything in that line; still he might hear a little. A semi-deaf child would have been sung to long before that time, but the little totally deaf child was different. No lullaby could penetrate his ears nor soothe him to sleep. Besides, Richard was either wide-awake or sound asleep—there was no drowsy period with him.

So one day at 10 o'clock in the morning I had Richard sent up to the library. The sun streamed into the room. Out of doors the wind blew—it was a cold, crisp day, just the kind for a half hour's hard work. Richard doesn't care for laps at all; he prefers bats and balls. Still I coaxed him into mine and began to sing (What do you think?) "Yankee Doodle." His head rested on my shoulder, with one hand beside it and the other on my throat. He did not look up. He was not surprised. He was quieted. He was happy. There he lay for one-half hour, never stirring, as stilled as any little hearing child could ever have been by a mother's lullaby. He felt in my chest, shoulder, and throat the vibrations of my voice—a new sensation to him. I thought he had fallen asleep, for one of the teachers coming in found that his eyes were closed, but at recess I lifted his head. He had not been sleeping. He smiled, jumped down, and ran off to put on his coat and hat, first stopping in the school-room to explain to the other children that he, too, had been upstairs with me, listening to my voice. (Each child considers it an honor to go to the library for articulation lessons. I have never found out why, but that is the prevailing idea.)

That night, in the dark, Richard stretched his little hand far out until it touched the teacher sleeping near him, and he made plain to her that he wanted her to sing to him. There, at 3 o'clock in the morning, she sang to him, and, crawling to her side, he placed his little lips to her ear and sang to her, "La-la-la."

Thus Richard learned that he has a voice. Now he loves nothing better than to climb onto someone's lap, nestle there, and try to hear. And he in turn will sing. Now, with one hand on teacher's throat and the other on his own, he gives voice as required—one long ä or several short ones. What do I expect of this? Nothing more than the ability to accent words fairly well and to give high and low voice, even if I expect as much as that. But Richard enjoys it all.

We have used throughout his instruction the program that has been printed in this department. It has been changed to suit the changing needs of the child at least three times during the thirteen weeks which Richard has spent in school.

Richard himself has gone home for the holidays. As I write this I am unable to determine how to arrange his program, for his mother tells me "Richard just shakes his head 'no' sometimes." How much shaking will he do when he comes back? How can we win him to our way? We shall see.

THE INDUSTRIAL DEPARTMENT

Conducted by WARREN ROBINSON, M. A., School for the Deaf, Delavan, Wis.
Chairman Industrial Section of the Convention of American Instructors of the Deaf

THE ECONOMIC EFFICIENCY OF THE DEAF—SUGGESTIONS TO INDUSTRIAL TEACHERS, STORIES OF SUCCESS, AND HINTS ON HOW TO SUCCEED

The Occupations of Former Pupils at Schools for the Deaf

The records of the graduates and some of the non-graduates of three schools for the deaf are before us. These are of special interest, since they cover widely different sections of the country from the Mississippi almost to the Pacific coast.

Only by a thorough study of the rank and file of the graduates and non-graduates of our schools for the deaf, and of the college for the deaf at Washington, D. C., over broad areas, can sound conclusions be drawn as to the best policy to be pursued in conducting them. It is wrong to judge of the merits of a school or college, whether for the deaf or the hearing, from a few brilliant examples of individual cases of success which they are supposed to have produced. It is by the influence one way or the other of its methods and subjects taught, upon the mass of its students in after life, that the true standing of an educational institution is to be determined.

The schools referred to are the Utah School, the Nebraska School, and the Wisconsin School. The graduates of the Utah School number 41, beginning with the first in 1894 to the last in 1910. The school trade of 9 was carpentry; of 9, printing; of 13, domestic science; of 4, shoemaking; of 2, blacksmithing; of 2, agriculture; of 1, floriculture; of 1, barbering. After leaving school their occupations are, with one exception, accounted for as follows: 3 carpenters, 9 farmers, 1 painter, 1 teacher, 3 instructors of the trades they learned at school, 2 printers, 1 forest supervisor, 1 boys' supervisor in a school for the deaf, 1 photographer, 1 business man, 1 laborer, 3 dressmakers, 2 students of the University of Utah, 4 housewives, and 7 students attending high school (for the hearing) or taking special courses. These statistics, it may be remarked, are of very recent date.

The Nebraska School was founded in 1869, and since that time 769 pupils have been enrolled. Of this number 76 have been awarded diplomas of graduation. No mention is made of the trade each graduate pursued at the school, but it is taken for granted that all worked at one or the other of the industries taught. These include designing and art, carpentry, printing, shoemaking, painting, domestic science, agriculture and gardening, baking, and laundry work.

Not taking into account those married or at home, and also omitting other circumstances which make a definite statement of occupation difficult, the occupations of 45 of the graduates follow: 4 teachers, 1 ranchman, 2 cattlemen, 1 fisherman, 6 artists, 2 assistant boys' supervisors, 1 assistant girls' supervisor, 2 barbers, 1 photographer, 1 poultryman, 13 farmers, 2 printers, 1 post-office employé, 1 government employé, 3 carpenters, 1 packing house employé, 1 box factory hand, 1 bank clerk, and 1 inventor.

The Wisconsin School was founded in 1852 and graduated its first class in 1861. It has educated 1,240 pupils, of whom 314 were graduates. The record with which we are concerned includes the graduates and about 100 non-graduates. No track has been kept of the school trades of the graduates or of the non-graduates. The trades taught at the school are printing, carpentry, shoemaking, art, domestic science, and, since 1897, manual training.

In enumerating the occupations of the graduates we find 54 farmers, 11 carpenters, 12 shoemakers, 13 printers, 26 farm hands and laborers, 24 shoe-factory hands, and among the remainder are engravers, a lithographer, teachers, tanners, barbers, carriage-trimmers, tailors, dressmakers, agents, a real-estate man, a drawbridge tender, a coffin maker, jewelers, seamstresses, milliners, an assistant postmaster, a glove factory hand, saw mill hands, a wax worker, cigar makers, a taxidermist, a harness-maker, machinists, landlord, a tool maker, a paper mill employé, a lumber hand, a livery hand, clerks, a storekeeper, a boot and shoe dealer, a retoucher, painters, warehouse hands, janitors, milkmen, laundresses, knitting mill hands, an ice dealer, a hotel hand, a laundryman, a cook, bookbinders, gardeners, dressmakers, a flour mill hand, a steamfitter, a cooper, a tinner, foundry workers, domestics, furniture factory employés, a lumber-yard hand, etc. At one time there was a superintendent of a school for the deaf, a newspaper man, and an editor among its former pupils.

Utah has three graduates of Gallaudet College. Twenty-three attended the college from Wisconsin and fifteen from Nebraska. Special attention is called to the unusual success of some of the Utah graduates, particularly as farmers and owners of homes. The forest supervisor is also an expert surveyor, doing

work for the government. Many of the Nebraska graduates make a very creditable showing, and one not a graduate, but who married one, is a prosperous cotton grower and a highly respected citizen in his community. It is not always to the graduates alone that we can point with pride.

The number of printers from the Wisconsin School calls for a remark. The thirteen mentioned are not all, there being five more who learned the trade elsewhere before the establisment of that department at the school. The noticeable feature of the matter is that it is doubtful if more than six of the thirteen are now on the job. Their inability to meet the present requirements of the trade has led to a rapid falling off in the demand for them of late years.

Though fairly representative, still how incomplete is this record of the three schools. There are possibly a hundred and fifty from the Utah, more than six hundred from the Nebraska, and more than eight hundred from the Wisconsin Schools yet to be heard from.

Yet, incomplete as this investigation is, to the thoughtful or philosophic observer it teaches one of the greatest lessons that can be learned in the profession today, and it is this: that the best education that can be given to the deaf is the one that increases their usefulness to its highest capacity by developing every power of brain and body. This applies with double force to the mass of them. Not the slightest outlay should ever be made at the expense of the many for the few. There need be no fear that the unusually gifted will not take care of themselves. Dr. Crane said, at the meeting of the Industrial Section last summer: "No scheme of education is acceptable today, nor can it hope to become so, until it not only builds up the masses, but reaches out and uplifts and dignifies, not one but all the industries as well."

The Shoemaking Trade

This department is in no hurry to give a sweeping indorsement to the action of the Alabama School in dropping shoemaking from the list of trades taught at that institution. It may have exceptional reasons, local and otherwise, for its action; but so universal and indispensable is a practical knowledge of shoemaking in every locality that it would seem more expedient to change or modify the manner in which it is taught than to abolish it altogether. One way would be to install more repairing machinery. We even believe that in large schools it would not be amiss to introduce more machinery for the manufacture of shoes.

As to the repairing side of the trade, there is a shoe repairer in Ogden, Utah, who began with a patching machine, and as time went on he kept adding first one kind of a machine and then another, with such success that now that man has a $4,000 home, drives a fine passenger automobile, and has money in the bank. Again and again we come across deaf men who are making a handsome living running a repair shop or a shoe store.

It may be wise not to narrow down the consideration of this subject to the mere making of foot-wear, but rather to contemplate it in the broad sense of working in leather, an occupation which embraces many useful branches, such as harness-making, carriage trimming, factory work, etc. Those pupils who work at the trade in school may by no means become shoemakers, but they may form a liking for working in leather, and take up some branch in that line after their school days are over.

A Linotype for the Illinois School

At its last session, the Illinois Legislature very generously appropriated $4,000 for the purchase of a linotype machine for the printing department of the Illinois School for the Deaf. This is a recognition by that institution of the growing importance to the deaf of a mastery of present-day mechanical devices. The statement was made somewhere several years ago that one reason why the colored folk of the South were so far behind was that they could not handle or operate machinery, and in this there seems to be a great deal of truth. It is the main purpose of the Illinois School to give linotype instruction to those who are so far advanced in their schooling that they probably will have occasion to use their knowledge within a few years.

The Manual Training Magazine

No periodical that comes to our desk is more valuable or sets a higher standard in its chosen field than The Manual Training Magazine, published at Peoria, Ill., by the Manual Training Association of America. It is copiously illustrated with fine half-tone specimens of manual training work of every description. A perusal of it is an inspiration to any teacher. Every phase of manual training in its relation to mental development, education, and life is profoundly and forcefully discussed by able men and women. Nor does it confine itself to this subject alone, but takes in the question of trade-teaching and the vocational and trade school.

Lately a manual training teacher has been traveling in Europe writing up all about manual training schools there, the descriptions and historical accounts of which are very suggestive and replete with helpful information.

A part of the magazine is devoted to keeping its readers posted with regard to all innovations, changes and improvements in their profession, and the general progress of education all over the world.

Joseph W. Modar is the prosperous owner of a shoe shop in Cawker City, Kas.

HOW TO PRACTISE LIP-READING

Conducted by EDWARD B. NITCHIE, B. A., Principal, The New York School for the Hard-of-Hearing

A MONTHLY DEPARTMENT OF HOME-INSTRUCTION AND OF SUGGESTIONS TO THE TEACHER OF THE ART

XIV

HOW TO STUDY THE LESSON

(For detailed outline, see the December, 1911, number of THE REVIEW.)

1. Understand the movement.
2. Study *Movement Words* with mirror:
   - *a.* To see new movement.
   - *b.* To see each movement.
   - *c.* To see contrasts.
3. Study *Movement Words* with assistant, to be repeated by groups.
4. Study *Contrast Words:*
   - *a.* With mirror.
   - *b.* With assistant.
5. Study *Practise Words* with assistant:
   - *a.* To see new movement.
   - *b.* To see each movement.
   - *c.* To understand sentences composed from the words.
   - *d.* To repeat words quickly, skipping.
6. Study *Sentences* with assistant:
   - *a.* To see (1) the sentence, then (2) its variations.
   - *b.* To repeat original sentences quickly, skipping.
   - *c.* To see each word.
7. Study *Practise Words* with mirror.
8. Study *Sentences* with mirror.

CONSONANTS REVEALED BY LIPS—(continued)

R (BEFORE A VOWEL) PUCKERED CORNERS

For *r*, as in "reef," before a vowel, the lips show a drawing together or *puckering* at the *corners*. (After a vowel, as in "arm," *r* tends to be slurred and will commonly show no movement whatever; though if more carefully pronounced it may show a slight puckering at the corners.)

Movement Words

feed,	weed,	*r*eed
fed,	wed,	*r*ed
fag,	wag,	*r*ag
fin,	win,	*r*id
fun,	won,	*r*un
	far, *r*ah	

Contrast Words

Contrast the puckered-corners movement for *r* with the puckered-variable movement for *wh* and *w;* notice the slightly larger mouth opening for *r* and the greater degree of puckering for *wh* and *w*.

reap—weep rip—whip
rest—west run—won
rack—whack

Practise Words

*r*eap[1]	*r*ap[3]	*r*uff[5]	*r*ope
*r*eam[1]	w*r*ap[3]	*r*oute	*r*ipe
*r*ed[2]	*r*ich[4]	*r*oom	f*r*ee
w*r*en[2]	*r*idge[4]	*r*ook	b*r*ief
*r*am[3]	*r*ough[5]	*r*aw	b*r*ow

Sentences

1. I bought a ream of paper. 2. "Three cheers for the red, white and blue!" 3. The wrap was not warm enough. 4. The soil on the farm is very rich. 5. The ocean is very rough this morning. 6. What route will you take when you go west? 7. There is always room for one more. 8. I moved my rook on the chess board. 9. The weather was cold and raw. 10. Give him enough rope and he will hang himself. 11. Cherries are ripe! 12. We are a free people. 13. My time is very brief. 14. "His brow is wet with honest sweat."

S, Z—TIGHTENED-CORNERS

For *s*, as in "saw," and *z*, as in "zone," the muscles just *outside* the corners of the mouth are drawn or *tightened*, causing a slight tremulous movement there. This movement is, at first, hard to see, but once thoroughly learned it becomes comparatively easy. An additional help will be found in that the teeth are very close together, closer than for any other sound. The movement on the whole is similar to that for long ē, extended narrow; but it is rarely confused with the ē movement, for ē is a vowel and *s* and *z* are consonants.

Movement Words

weed,	reed,	*s*eed
wed,	red,	*s*aid
wag,	rag,	*s*ag
win,	rid,	*s*in
won,	run,	*s*un
	rah, *s*ard	

Practise Words

*s*eam[1]	*s*on[3]	bee*s*[4]	pu*ss*
*s*eem[1]	*s*un[3]	dre*ss*	pau*se*[6]
*s*aid[2]	*s*ard	a*s*[5]	paw*s*[6]
*s*et[2]	*s*oup	ha*s*[5]	pa*c*e
*s*ent[2]	*s*oon	thi*s*	mi*c*e
*c*ent[2]	*s*aw	fu*ss*	po*s*e
*s*ash	peace[4]	far*c*e	cow*s*
*s*ieve	piece[4]	moo*s*e	boy*s*

Sentences

1. You seem very much better this morning. 2. I don't know what you said. 3. The girl wore a blue sash. 4. You cannot carry water in a sieve. 5. What time does the sun set? 6. The sard is a semi-precious stone. 7. What kind of soup would you like for dinner? 8. I saw you on the car last week. 9. "Let us have peace!" 10. Your new dress is very becoming. 11. Handsome is as handsome does. 12. This is just what I want. 13. Don't make so much fuss over nothing. 14. The play was a very clever farce. 15. I saw the moose come out of the woods. 16. Did you ever read "Puss in Boots?" 17. There was a pause in the conversation. 18. I can hardly keep pace with you. 19. When the cat is away, the mice will play. 20. Did you pose for the picture? 21. "The sheep are in the meadow, the cows are in the corn." 22. Boys will be boys.

SH, ZH, CH, J—LIPS-PROJECTED

For *sh*, as in "sham," *zh* (the *z* in "azure" has the sound of *zh*), *ch*, as in "chap," and *j*, as in "jam," the *lips* are thrust forward or *projected*. (Soft *g*, as in "ledge," has the sound of *j*.)

Movement Words

reed,	seat,	*sh*eet	—ease,	ea*ch*
red,	said,	*sh*ed	—ess,	e*dg*e
rag,	sag,	*sh*ag	—has,	ha*sh*
rid,	sin,	*sh*in	—is,	i*tch*
run,	sun,	*sh*un	—us,	hu*sh*
	sard,	*sh*ard	—ars,	ar*ch*

Contrast Words

Contrast this lips-projected movement (*sh, zh, ch, j*) with the puckered-corners movement (*r*); notice that though the lips project for both movements, the projection is less for *r;* and also notice that for *r* the corners of the mouth are more drawn.

sheep—reap	chip —rip
shed —red	shove—ruff
jam —ram	shy —rye

Contrast also the lips-projected movement (*sh, zh, ch, j*) with the tightened-corners movement (*s, z*); notice that the teeth are close together for both movements, but that the lips are projected for *sh, zh, ch,* and *j,* while for *s* and *z* the lips are rather flattened.

sheep—seem	peach —peace
jam —sap	dredge—dress
chin —sin	mush —muss

Practise Words

*sh*eet[1]	*sh*oot[3]	ma*sh*[5]	dou*ch*e
*ch*eat[1]	*ch*ute[3]	ba*dg*e[5]	bu*sh*
*sh*ed	June[3]	pa*tch*[5]	por*ch*
*sh*aft	*sh*ook	pin*ch*[6]	merge[8]
*ch*ill	*j*aw	pi*tch*[6]	per*ch*[8]
*j*ump	rea*ch*	ru*sh*	bir*ch*[8]
*sh*arp[2]	e*dg*e[4]	ar*ch*[7]	page
*ch*arm[2]	e*tch*[4]	har*sh*[7]	poa*ch*

Sentences

1. The man will cheat you if he can. 2. I tied the horse in the wagon shed. 3. The horse fell and broke a shaft. 4. There is a chill in the air tonight. 5. The noise made me jump. 6. I wore the watch charm on my fob. 7. I saw a star shoot across the sky. 8. "What is so rare as a day in June!" 9. The tempest shook the house. 10. Samson slew a thousand men with the jawbone of an ass. 11. Can you reach that book for me? 12. Don't sit on the edge of your chair. 13. The man had a patch on his trousers. 14. Who is going to pitch in the baseball game today? 15. I am in a rush to catch the train. 16. The rainbow made an arch in the sky. 17. Did you use a douche for your cold? 18. Don't beat about the bush. 19. We sat out on the porch last evening. 20. Did you ever go fishing for perch? 21. Will you find the page for me in the book? 22. Would you like to have me poach the egg?

PUCKERED VOWELS

LONG OO—PUCKERED-NARROW

For the sound of long *oo*, as in "coon," the lips are drawn together or *puckered*, and the opening between the upper and lower lips is very *narrow*. (Long *oo*, being a vowel, is seldom confused with *wh* and *w*, which are consonants. Example: though *oo*, in "moon," looks much like *w*, it could not be mistaken for *mwn*, substituting *w* for *oo*, does not make a word.)

Movement Words

beet, bit, b*oo*t—heap, hip, wh*o*m
feet, fit, f*oo*d—eve, if, h*oo*f
wheat, wit, w*oo*ed
read, rid, r*u*de
seen, sin, s*oo*n—ease, is, *oo*ze
sheen, shin, sh*oe*—teach, dish, d*ou*che

Practise Words

p*oo*l	sh*oe*	y*ou*	wh*o*se
f*oo*l	loop[1]	c*oo*p	t*oo*th
w*oo*	loom[1]	wh*o*	sp*oo*l
r*u*le	tomb[2]	wh*o*m	sp*oo*n
s*oo*the	d*oo*m[2]	h*oo*f	sp*oo*k

Sentences

1. I went swimming in the pool. 2. A fool and his money are soon parted. 3. "A frog, he would a-wooing go." 4. We should obey the golden rule. 5. The breeze in the tree-tops will soothe you to sleep. 6. "For want of a nail the shoe was lost." 7. Did you weave the cloth at the loom? 8. Have you seen the tomb of Washington at Mt. Vernon? 9. The chicken "flew the coop." 10. Who are you? 11. Whom do you wish to see? 12. The donkey has a small hoof. 13. Whose house is this? 14. The baby has a tooth! 15. I bought a spool of thread. 16. "The dish ran away with the spoon." 17. Did you ever see a spook?

SHORT OO—PUCKERED-MEDIUM

For the sound of short *oo*, as in "good," the lips are *puckered*, and the opening between the upper and lower lips is neither narrow nor wide, but is *medium*.

Movement Words

boot, b*oo*k
food, f*oo*t
wooed, w*oo*d
rude, r*oo*k
soon, s*oo*k—booze, puss
shoot, sh*oo*k—push

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bet, but, p*u*t
fen, fun, f*oo*t
wen, won, w*oo*d
reck, rug, r*oo*k
set, sun, s*oo*k—Bess, bus, puss
shed, shun, sh*oo*k—mesh, mush, push

Contrast Words

Contrast the puckered-*medium* (short *oo*) with the puckered-*narrow* (long *oo*); notice the greater degree of puckering for long *oo*.

foot —food	pull —pool
put —boot	full —fool
wood—wooed	good—coot

Also contrast the *puckered*-medium (short *oo*) with the *relaxed*-medium (short *ŭ*); notice the difference between the puckered and relaxed lips.

foot—fun	wood—won
put —but	good —gun

Practise Words

p*u*ll[1]	r*oo*k	c*oo*k	w*oo*l
b*u*ll[1]	s*oo*t*	h*oo*k	p*u*t
f*u*ll	sh*oo*k	p*u*ss	b*oo*k
w*oo*d[2]	l*oo*k	p*u*sh[3]	w*o*lf
w*ou*ld[2]	t*oo*k	b*u*sh[3]	sh*ou*ld

Sentences

1. A long pull, a strong pull, and a pull altogether. 2. The barrel is full of rain water. 3. I would not if I could. 4. The rook in chess is usually called the castle. 5. I shook the bottle before I took the medicine. 6. Look out of the window! 7. You took a great deal of trouble for me. 8. Too many cooks spoil the broth. 9. I'll do it by hook or by crook. 10. "Pussy cat, pussy cat, where have you been?" 11. Will you push the door open for me? 12. The sheep's wool is very heavy. 13. Don't put yourself to too much trouble. 14. What book are you reading? 15. The wolf is at the door. 16. I should have known better!

* The *oo* in "soot" is usually short, but may be long.

AW, O IN "ORB"—PUCKERED-WIDE

For the sounds of *aw*, as in "cawed," and of the *o*, in "orb," the lips are slightly *puckered*, and the opening between the lips is the widest of the *puckered* vowels.

Movement Words

boot, put, p*aw*n—whom, *o*rb
food, foot, f*aw*n—hoof, c*ou*gh
wooed, wood, w*a*lk
rude, rook, r*aw*
soon, sook, s*ou*ght—booze, puss, p*au*se
shoot, shook, short—push, p*o*rch

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pat, part, p*aw*n—hap, arm, *o*rb
fat, far, f*aw*n—gaff, carve, c*ou*gh
whack, w*a*lk
rack, r*aw*
sad, sard, s*ou*ght—as, ars, *aw*es
shad, shard, short—patch, parch, p*o*rch

Contrast Words

Contrast the *puckered*-wide, for *o*, as in "orb," with the *relaxed*-wide, for *ah;* notice the difference between puckered and relaxed lips.

for —far	born—bard
form—farm	orb —arm

Practise Words

p*aw*n[1]	th*ou*ght	h*a*ll	b*a*ll[3]
b*ou*ght[1]	l*aw*n	*o*rb	b*a*wl[3]
f*o*rm	t*au*ght[2]	wh*a*rf	m*au*l[3]
w*a*rm	t*au*t[2]	g*au*ze	*ou*ght[4]
r*aw*	d*aw*n[2]	t*o*rch	*au*ght[4]
s*ou*ght	y*aw*n	wr*o*th	*au*k
sh*o*rt	c*au*ght	p*a*ll[3]	

Sentences

1. The thief took my watch to the pawnbroker. 2. It is not good form to eat with a knife. 3. We have had a very warm summer. 4. The weather was very cold and raw. 5. I sought you everywhere before I found you. 6. That is the long and the short of it. 7. I never thought of that before. 8. The lawn ought to be mowed. 9. I arose at dawn this morning. 10. What makes you yawn so? 11. I caught you that time. 12. The house has a large hall. 13. The moon is the orb of night. 14. The ship is at the wharf. 15. What kind of gauze was the dress made of? 16. Did you ever see a torch-light parade? 17. That makes me wroth! 18. Are you going to the ball game? 19. You ought not to do that. 20. Have you seen the auk at the Zoo?

NEWS AND COMMENT

HAPPENINGS OF GENERAL AND TECHNICAL INTEREST—HOW THEY APPEAR TO THE LAY AND PROFESSIONAL PRESS—ITEMS FROM OUR READERS SOLICITED

BOOK REVIEWS.

A New Picture Vocabulary.

With the publication of Part II of his "Classified Picture Vocabulary for Deaf Children," Mr. S. Kutner completes his trilogy of books designed to assist in the teaching of speech and language to the deaf by means of pictures. The preface to the new work describes the function of these books as follows: "In the 'Picture Primer for Deaf Children,' preceding the 'Classified Picture Vocabulary,' the objects illustrated are arranged in a manner calculated to facilitate the teaching of articulation. Greatly augmented in number, in Parts I and II of this book, they are grouped under given heads, followed by a series of lessons embodying certain language forms naturally suggested by them, and serving, in addition, for reading, transcription, or memorizing.

"For the purpose of independent evening work and tests in class, an elliptical exercise is given upon each reading lesson. The general arrangement of this, the concluding part of the 'Classified Picture Vocabulary,' follows exactly on the lines of the first, the language only being more advanced."

To the compilation of these pictures upon a basis of speech and language, Mr. Kutner brings a long experience as teacher, and, later, in his capacity of headmaster of the Jews' Deaf and Dumb Home of London, as director and critic of educational work for the deaf. The gratifying success which attends the judicious use of these little books can, therefore, be readily understood.

The new picture vocabulary contains several maps and eight full-page illustrations in color, in addition to some 200 smaller cuts.

(A Classified Picture Vocabulary for Deaf Children, Part 2. London: George Philip and Son, Ltd., 1911. Cloth, pp. 128 and viii. Price, 1s. 6d.)

Superintendent Bangs to Retire.

The announcement has been made that Mr. Dwight F. Bangs will retire on the first of July from the superintendency of the North Dakota School for the Deaf, of which he has been the head for the past eighteen years. Mr. Bangs has been a force in his profession, and under his administration the North Dakota school has grown rapidly from small beginnings until it now occupies a prominent position among the educational institutions for the deaf.

Deaf Student Takes Honors at Harvard.

In the honor list at Harvard this year there is the name of a young man who has had to overcome serious physical defects to win his scholastic distinction. George Draper Osgood, despite the fact that he is deaf—not deaf and dumb, as has been reported—completed his work for an A. B. last June, but will not take the degree until 1912 in order to graduate with his class. He is now doing advanced work in chemistry and mathematics. Mr. Osgood, who is a nephew of ex-Governor Draper, attended the Horace Mann School from the time he was five years old until he was nine, and later was a student at Chauncey Hall and Noble and Greenough. He is the latter school's sole representative in this year's Harvard scholarship list. The difficulties that this young man had to meet were enough to discourage the ordinary person. Born deaf, he was forced to acquire speech before he could begin his education. In college he has had to depend largely on second-hand notes in all his course, because even if the professor could be depended on always to face his class, it is a physical impossibility for a student to keep his eyes fixed upon a speaker and at the same time take legible longhand notes. His is indeed an example of what can be accomplished by courage and hard work.—Boston Transcript.

It may be added that the subject in which Mr. Osgood especially distinguished himself was chemistry.

Municipal Night School for the Deaf.

A class for the deaf, numbering about 15 members, has been organized at Flint, Mich., in connection with the municipal night school system. The pupils are taught by a teacher detailed from the State School for the Deaf, which is located in that city.

New Catholic Monthly for the Deaf.

"Ephpheta," a Roman Catholic monthly for the deaf, has been established at New York City, the first number appearing last January.

ACKNOWLEDGMENTS.

The following publications, recently received, have been filed for preservation in the library of the Volta Bureau:

School Guide of the Nebraska School for the Deaf; Catalogue of the Vänersborg (Sweden) School for the Deaf; a pamphlet illustrating the work done in sloyd at the Copenhagen School for the Deaf; and the current reports of the following schools: Kentucky, Emden, and Tokyo.

The Volta Bureau is especially indebted to the executive heads of the following schools for supplying, in whole or in part, the missing numbers of the back files of reports of their institutions:

Columbia Institution, Washington, D. C.; Florida; Georgia; Kansas; Horace Mann, Boston, Mass.; Sarah Fuller Home, West Medford, Mass.; Michigan; Minnesota, Mississippi; Missouri; Montana; Nebraska; New York Institution for the Instruction of the Deaf and Dumb, New York City; New York Institution for the Improved Instruction of the Deaf and Dumb, New York City; North Carolina, Morganton; North Carolina, Raleigh; Ohio; Pennsylvania Oral School, Scranton; Home for the Training in Speech of Deaf Children, Philadelphia, Pa.; Rhode Island; South Carolina; South Dakota; Wisconsin; St. John's Institution, Boston Spa, England; Derby, England; Royal Association in Aid of the Deaf and Dumb, London, England; Training College for Teachers, London, England; Swansea, Wales; Belleville, Canada; Halifax, Canada; Wellington, New Zealand, and Wiener-Neustadt, Austria.

Deaf Boy Succeeds in High School.

A. J. Winnie, Inspector of the Day Schools for the Deaf, is in receipt of a letter from Lester Brophy, of Oregon, Wis., stating that he is getting along nicely in the Oregon High School. The branches he is studying are physical geography, algebra, English, agriculture, and arithmetic. He writes that his report card indicates standings in these subjects ranging from 82 per cent to 90 per cent. Mr. Brophy graduated from the eighth grade of the Day School for the Deaf at Madison, last June.—Wisconsin Educational News Bulletin.

Teaching Etiquette.

In our school an amusement fund is maintained which is used for the entertainment of the pupils in various ways. Stereopticon exhibitions are given every few weeks, with change of views at every performance. These not only afford a great deal of pleasure, but are highly educational in character. Occasionally professional entertainers are employed for an evening, and now and then the whole school is sent to attend some suitable performance at the opera house.

Birthday parties have become very fashionable among those of our pupils who choose to share their pocket money with their schoolmates. The ladies of the house lend their aid in making the necessary preparations, and everything is arranged as tastefully as if the affair were to be a social event of importance. One of the large school-rooms is decorated according to a certain color scheme, and this arrangement is carried out also in the refreshment room, where the menu is daintily served.

On such occasions we have seen the little hostess do the honors of the evening with a grace and dignity befitting the drawing-room, while the guests conducted themselves with the utmost propriety and ease of manner. These little parties are not only very enjoyable, but they afford opportunity to teach very necessary lessons in social etiquette.—Virginia Guide (Staunton School).

Kansas School's Golden Jubilee.

The Kansas School for the Deaf recently celebrated the golden jubilee of its founding.

I have known teachers of the deaf who have had success in the literary training of their pupils by giving classics in simple language, then allowing access to the books themselves. But I never knew a deaf pupil to learn to love reading by having to pass an examination on what he had read.—Weston Jenkins.

Miss Elizabeth Dumke, of Neenah, Wis., started to learn the tailor's trade at fourteen, and has worked steadily at it ever since, making an excellent living and laying up money. Upon her devolves the responsibility of instructing novices who enter the firm where she works. Among these are three deaf women whom she has succeeded in making first-class tailors.

Miss Lillian Morey, of Appleton, Wis., became a skillful retoucher in a photograph studio, and is said to have laid up several thousand dollars through her artistic ability, before her death several years ago.

Evan Robinson, who graduated from the Wisconsin School some years ago, is demonstrating himself to be quite a farmer on his father's farm near Berlin, Wis., where he raises crops of sugar beets, corn, etc., of which a veteran in the business might be proud.

LITTLE STORIES OF SUCCESS

Compiled by Warren Robinson, M. A.

Lee Gorsuch is employed in a cork factory at Beaver Falls, Pa.

David Dresback is doing an excellent business running a small shoe store at Johnston, Ohio.

Roy Caufman is employed as a printer, and W. McElroy works on the cutting machine of the Emerson Company in Baltimore.

Pitlow Munger, of Oberlin, Ohio, recently obtained a position as job printer with the Banner Printing Company of Wadsworth.

Henry Maker, formerly a baseball star in Michigan, is getting to be quite a poultry fancier. His business is located at Marcellus, Ohio.

Royal Durian holds such a good job in a studio at Wilkinsburg, O., that he would not throw it up even to move with his folks to another town.

Lem Anderson, of Trenton, Tenn., draws $50, including board, from the United States Government, working on the Forked Deer River. He is also a cotton grower of repute.

At the Michigan Reunion of the Deaf last summer, Paul E. Beugsch, of Cleveland, Ohio, was showing some of the fine work he is doing as a draughtsman in an architectural office in that city.

For faithfulness in his work, Harry O'Donnell, for a number of years employed by the Baldwin-Ellington Piano Co. of Cincinnati, has received a promotion with a large increase in salary.

L. Hanson, of Pittsburgh, is such a skillful workman in structural iron that the firm for which he works has paid his transportation to Detroit, Mich., where they have a big building under erection.

Robert J. Nicholes, of San Luis Obispo, Cal., writes his old superintendent, Professor Enoch Henry Currier, of the New York Institution, that he is a partner in the Crown Soda Works of that town, employing five men .

Rand, McNally & Co., of Chicago, have nine deaf compositors in their employ. They are Messrs. Friday, Philpott, Martin, Dowling, Sayles, Cowhick, Ryan, Deem, and Henry. None of them does job work, however, which seems significant

Albert Henry, formerly a farmer near Madison, Wis., for the last nine years has been working for the Gisholt Machine Company of that city, and now occupies the position of foreman of the painting department.

J. L. McManima and Melville Woodruff hold jobs with the Standard Sanitary Manufacturing Company of New Brighton, Pa. The former is said to be the only deaf man in the world who is a "handcuff and mystery man."

William Wheeler, Gallaudet College, '05, from Kentucky, is operating a linotype machine in the plant of the Lutheran Book Company at Columbus, Ohio. Mr. Wheeler is considered a first-class operator in spite of his deafness.

Harry Bulger, who started in the checking room of the American Bridge Works of Economy, Pa., has steadily risen in the estimation of the company during his six year's service, and now holds the responsible position of templet man.

Herbert Gunner is in the employ of the Chicago, Rock Island and Pacific Railway, as a clerk. Young Gunner is the son of General Gunner, of Dallas, Texas, who played a conspicuous part in the short-lived Mexican Empire under Maximilian.

Alfred Cashman, whose home is in Wisconsin, and C. C. Codman, of Chicago, have both taken up claims in the Flathead district in Montana, where they are now living. Their farms are only forty miles apart, though neither knew of the other's presence in the region until recently.

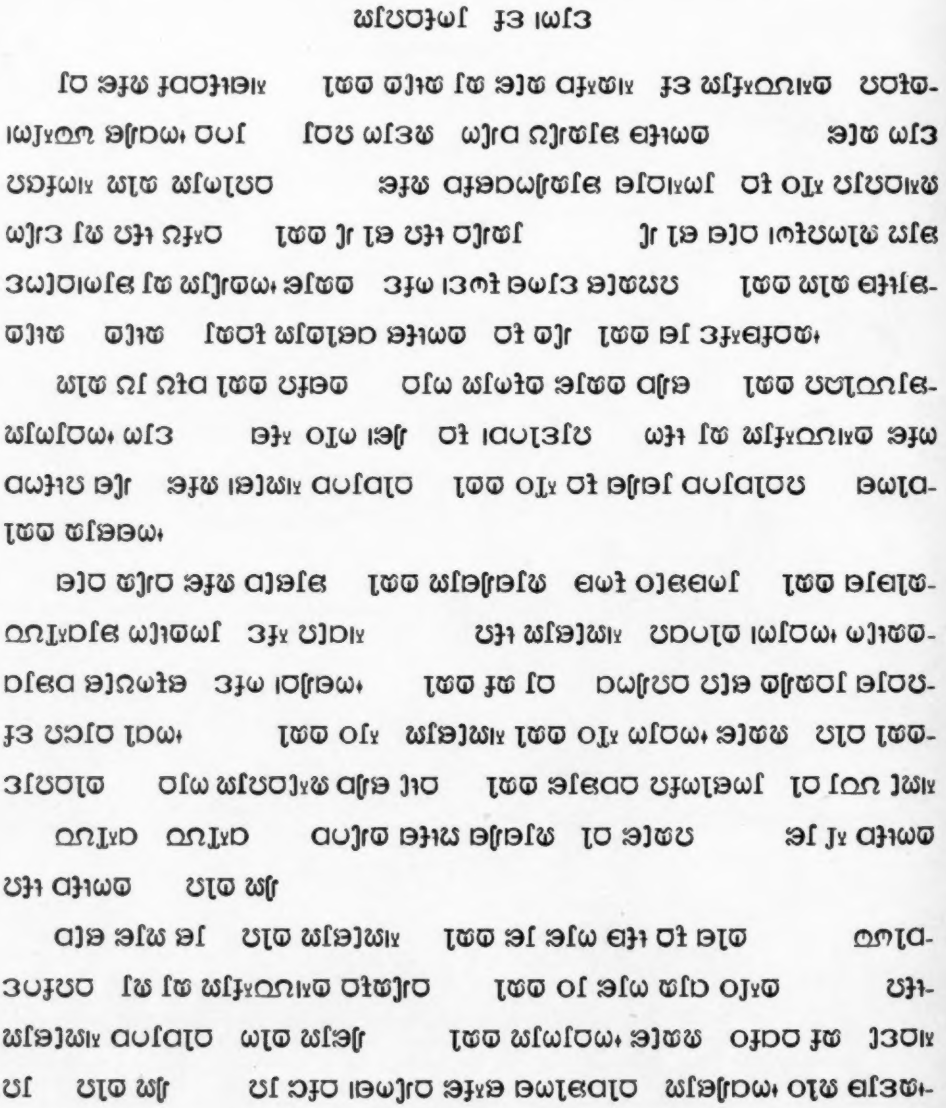
Another deaf sculptor is coming into prominence; namely, Miss Dorothy Stanton Wise, of London, England. She was educated mainly by her mother. So favorably has her work impressed those most capable of judging it that she has been commissioned to prepare groups for the Pageant of Empire at the Crystal Palace. Before this she had supplied most of the figures representing Indian history for the same institution.

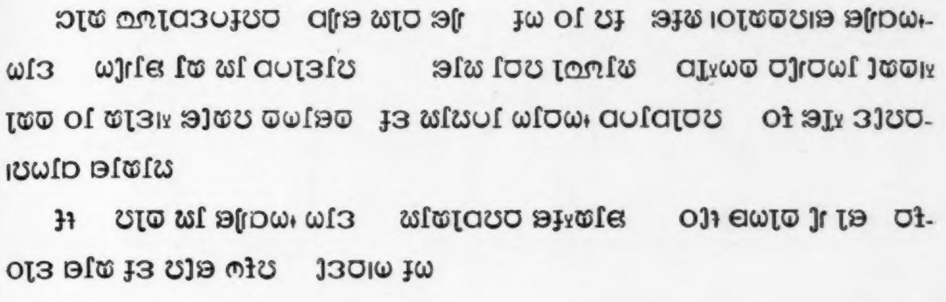
A great many people are skeptical as to the ability or wisdom of deaf persons driving automobiles, but the fact that Miss Florence Baker, who was orally educated in the Chicago Day Schools, operates her own electric carriage with ease, ought to dispel some of that skepticism. Then there is a deaf young man named Rapp of Kenosha, Wis., who never saw the inside of a ady school, who runs his auto as if it were the easiest thing in the world.

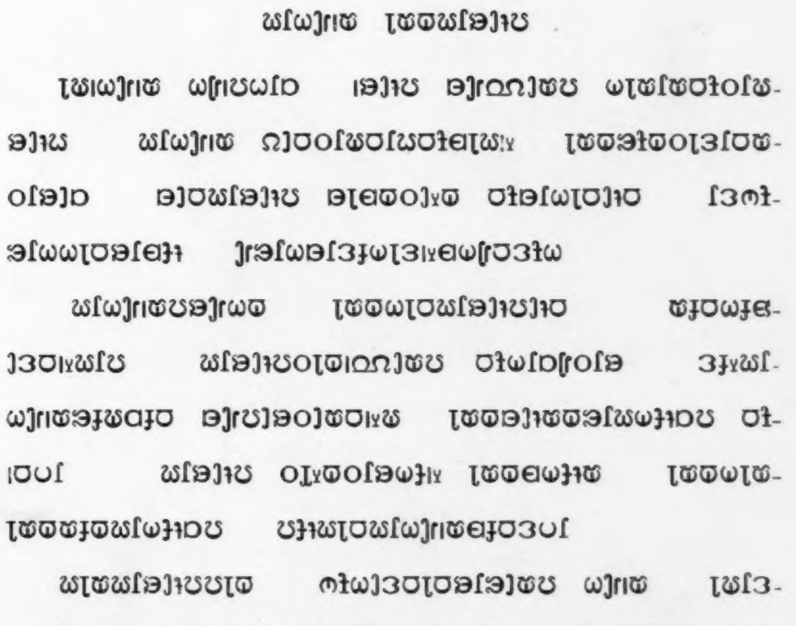
THE UNIVERSAL ALPHABETICS

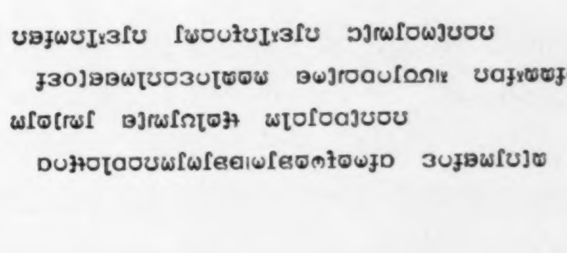
Conducted by M. GARDINER

MONTHLY LESSONS IN MELVILLE BELL SPEECH SYMBOLS, THE MASTERY OF WHICH ENABLES THE STUDENT CORRECTLY TO PRONOUNCE ANY SOUND IN HUMAN SPEECH



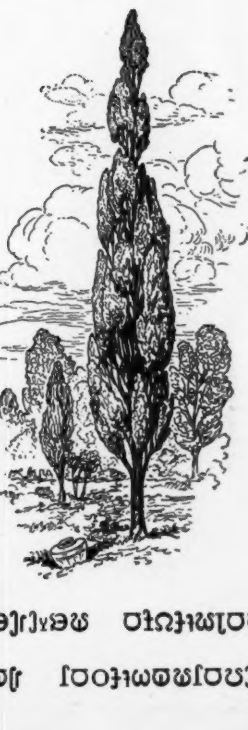


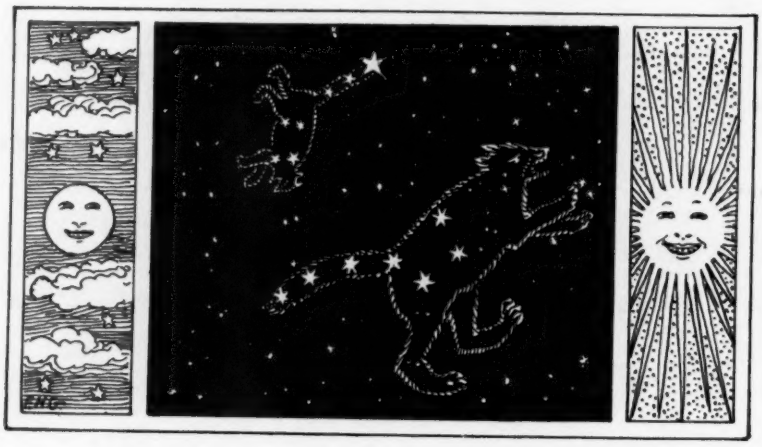




ꝑꝛeſent ſhe ſhall ſurely die.

Another day ſhe ſtole the key, and when the old woman was aſleep, ſhe went down and opened the door, and ſaw many golden eggs lying there. Then ſhe ſeized one, and ran away with it as faſt as poſſible. But the old woman awoke juſt as ſhe was running out of the door, and ſeeing what had happened, ſhe ſet off after the girl, and ran ſo faſt that ſhe ſoon overtook her.





ɯʎlɐuɒʌɯ

ɯʎlɐuɒʌlɐʇʍ ʇɥoʇɐɟɐʇoɹd ɯʎlɐuɒʌlɐʇʍ

ɐlɔuɹɔɯʎɟɯɐɯʎlɐuɒʌlɐʇʍ

ɯʎlɐuɒʌlɐʇʍ ʇɥoʇɐɟɐʇoɹd ɯʎlɐuɒʌlɐʇʍ

ɐlɔuɹɔɯʎɟɯɐɯʎlɐuɒʌlɐʇʍ

ɯʎlɐuɒʌlɐʇʍ ʇɥoʇɐɟɐʇoɹd ɯʎlɐuɒʌlɐʇʍ

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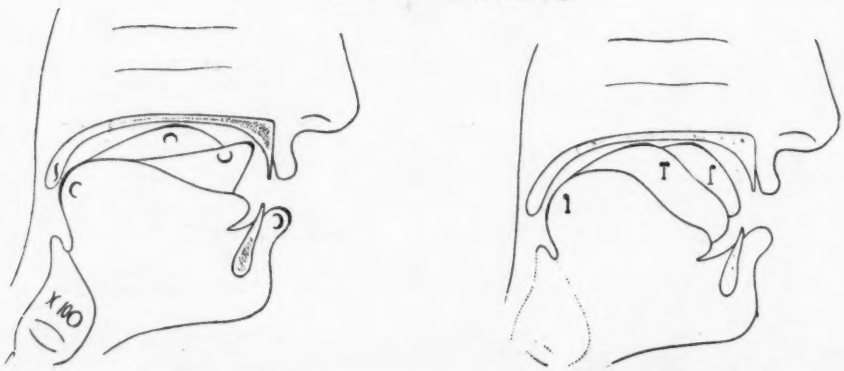
Basis of the Symbols



BASIS FOR CONSONANT SYMBOLS

BASIS FOR VOWEL SYMBOLS

N. B.—Those who desire to go more deeply into the subject of the Melville Bell Symbols are recommended to consult Dr. Alexander Graham Bell's lectures upon "The Mechanism of Speech," delivered before the American Association to Promote the Teaching of Speech to the Deaf. Published by Funk & Wagnalls Company, New York and London: Second edition, 1907. The Scientific use of the Symbols is explained in the chapter on "Methods of Studying the Mechanism of Speech," pp. 34-50. For "Method of Teaching the Symbols to the Deaf," see pp. 51-76. For a quick introduction to the system, see "English Visible Speech in Twelve Lessons" (Volta Bureau: 50 cents to members, 60 cents to others).

Special shuttles, containing nearly every Speech Symbol yet devised, have been cut for use on the Hammond typewriter. The Universal Alphabetics keyboard can be used interchangeably with the regular English characters on this machine. The price of this special shuttle of Universal Alphabetics, if bought directly from the Volta Bureau, is $2.50 each. Address the Superintendent.